This Issue Exceeds 130,000 Copies

THE JOURNAL

OF THE

American Medical Association

Subscription, $12.00 | Published Weekly at | *Single Copy, 35 Cents*
VOLUME 143, No. 8 | 535 North Dearborn Street, Chicago 10, Illinois | JUNE 24, 1950

Original Articles

HARLING OF THE FEMUR 709
Dana M. Street, M.D., Memphis, Tenn.

INFLUENZAL MENINGITIS 715
Samuel Angelbaum, M.D., and Jack Hoban, M.D., New York

VENTRICULAR FIBRILLATION 717
James L. Southworth, M.D.; Victor A. McKusick, M.D.; E. Cabrera Fabre, M.D., and Freeman L. Bowen Jr., M.D., Baltimore

TREATMENT OF HYPERTENSION 721
Morley J. Kark, M.D.; Marvin J. Romansky, M.D.; Eugene L. Cradley, M.D.; L. Jean Murdock, B.S.; Stanley H. Hoffman, M.D.; Edward J. Bottinger, M.D., and Walter L. Johnston, M.D., Los Angeles

AUREOMYCIN IN TREATMENT OF GONORRHEA 724
Calvin H. Claus, M.D.; Robert B. Stroup, Ph.D., and Robert B. Greenblatt, M.D., Augusta, Ga.

ANEMIA FOLLOWING USE OF ANTIHISTAMINIC DRUGS 726
James J. Crumbley Jr., M.D., Philadelphia

FEBRILE CONVULSIONS IN CHILDREN 728
M. G. Peterman, M.D., Milwaukee

EMPIRIC RISK FIGURES IN MONGOLISM 730
J. A. Böök, M.D., and S. C. Reed, Ph.D., Minneapolis

STUTTERING 732
Isaac W. Kerlin, M.D., Brooklyn

AMINOPHYLLINE 736
Samuel H. Wexler, M.D., and Jerome A. Schaub, M.D., Washington, D. C.

Clinical Notes

HEMOCHROMATOSIS 740
Robert P. Hanks, M.D., and F. J. McEvoy, M.D., Weslaco, Tex.

AGRANULOCYTOSIS 741
A. W. Hilker, M.D., Eau Claire, Wis.

AGRANULOCYTOSIS AFTER ANTIHISTAMINIC THERAPY 742
Harrison L. Martland Jr., M.D., and John H. Gadt, M.D., New York

Council Reports

Council on Physical Medicine and Rehabilitation 743

Editorials and Comments

A. M. A. Advertising Program 744
Antihistamines for Colds 744
Inclusion Bodies Disease 745
Broadcast of A. M. A. Inauguration 746
"M.D.—The U. S. Doctor" 746
The British Health Service 746

Washington News

Medical Legislation 747

Organization Section

Official Notes 749
Coming Medical Meetings 749
State Legislation 749

Government Services

Army 750
Navy 750
Veterans Administration 751
Miscellaneous 751

Regular Departments

Medical News 752
Marriages 754
Deaths 755
Foreign Letters
Norway 757
Spain 758
Sweden 758
Belgium 759
Brazil 760
Correspondence 761
Medical Motion Pictures 762
Medical Examinations and Licensure 762
Bureau of Medical Economic Research 763
Medicolegal Abstracts 764
Current Medical Literature 765
Book Notices 775
Queries and Minor Notes 779

Ready Now! NEW (1950) MAYO CLINIC VOLUME

Although this *New (1950) Mayo Clinic Volume* is just now coming off press, 73% of the print has already been ordered by doctors all over the world. If you want to make sure of obtaining your copy please send your order in right away—today, if possible. As you probably know, the *Mayo Volume* is not reprinted and once the original supply is exhausted it is impossible to procure a copy.

The *1950 Edition* (Volume XLI) is one of the greatest in a long line of important volumes from this famed medical center. In 215 well-illustrated articles, Mayo physicians and surgeons report on the significant research, on the new methods of diagnosis and treatment, on the new surgical technic developed at the Clinic last year.

Whether you are general practitioner, surgeon or specialist, you will find here scores of discussions that have immediate value to you—hundreds of facts that you can use right away in your practice.

Turn to *page 3* for a partial listing of the contents of this New (1950) Mayo Clinic Volume. Then fill out the coupon and mail it *today*—make *sure* of getting your copy.

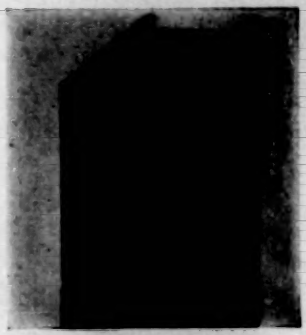
By the Staff of the Mayo Clinic and the Mayo Foundation. 830 pages, 6" x 9", with 150 illustrations. $10.50 *New—Just Ready!*

See also SAUNDERS Advertisement on pages 2 and 3

BIBLE INST OF L A
LIBRARY
558 S HOPE ST
LOS ANGELES 17 CALIF

Saunders

1730 pages... 162 contributors... 607 diseases covered



CECIL'S MEDICINE

COMMENTS

"... the outstanding textbook of medicine."
New York State Journal of Medicine.

"... too widely known to require detailed discussion."
Bulletin of New York Medical College.

"... Cecil is the best of all."
Dr. William C. Colbert, Memphis, Tennessee.

SEVENTH EDITION. What do you want in a textbook of medicine? Very probably you'll say: "completeness, authority, and quick-reference convenience." *Cecil*—generally recognized as the foremost American textbook of medicine—fills your specifications to perfection.

1. *Completeness.* 607 separate diseases and conditions are considered in 1730 pages of text matter, with detailed but concise discussions of etiology, pathology, symptoms, diagnosis, treatment, and prognosis.

2. *Authority.* The 162 contributors are among America's foremost authorities. *Cecil* is the required text in 86% of all American medical schools.

3. *Convenience.* The 40-page index, readable two-column format and clearly-worded discussions make this book easy to consult.

By 162 American Authorities. Edited by RUSSELL L. CECIL, M.D., Professor of Clinical Medicine; with the assistance of WALSH MCDERMOTT, M.D., Associate Professor of Medicine. Associate Editor for Diseases of the Nervous System: HAROLD G. WOLFF, M.D., Associate Professor of Neurology, Cornell University Medical School. 1730 pages, 7" x 10", with 377 illustrations on 244 figures, 18 in color. $12.00.
Seventh Edition.

New (5th) Edition—Mitchell-Nelson's Pediatrics

THERE'S a lot more to pediatrics than adjusting dosages, as every doctor knows today. The care of children—both sick and well—has increased in complexity along with other fields of medicine.

The *New (5th) Edition* of this standard work gives you all the information you'll need to care adequately for the younger element in your practice. It covers the diagnosis and treatment of disease in infancy and childhood, of course, but it *also* tells you in helpful detail *how to keep the well child healthy.*

The material represents the contributions of 63 contributors from all sections of the country, but the book as a whole bears the unmistakable stamp of Dr. Nelson's wide experience, keen understanding, and editorial ability. You get here *the facts* you want and need about all phases of child care—infancy through adolescence—and *the facts* are presented in uniform style, with a minimum of repetition.

Among the new or completely rewritten discussions in this *New (5th) Edition* are the following: Growth and Development (one of the finest presentations of this subject available anywhere); Congenital Malformations; Parenteral Fluid Therapy; Congenital Heart Disease; Infection, Immunity and Allergy; and Inborn Errors of Metabolism.

Edited by WALDO E. NELSON, M.D., Professor of Pediatrics, Temple University School of Medicine. With the collaboration of 63 contributors. 1488 pages, 7" x 10", with 476 illustrations, 19 in color. $12.50.

Convenient *Saunders* Order Form on next page →

THE JOURNAL of the American Medical Association is published weekly by the American Medical Association. Subscription price, $12.00 a year, 50c a copy. Canadian $13.50. Foreign $14.00. Entered as second class matter June 29, 1883, at the Postoffice at Chicago, Ill., under Act of March 3, 1879. Address all communications to the Journal of the American Medical Association, 535 N. Dearborn St., Chicago 10, Illinois.

Saunders Books

Ready now...73% of edition already sold!

NEW (1950) MAYO CLINIC VOLUME

EVERY doctor's book—that's the *Annual Mayo Clinic Volume*. This yearly report on new developments at the Mayo Clinic and Mayo Foundation is always equally valuable to the general practitioner, surgeon and specialist—any doctor can find in it scores of articles and hundreds of facts that are personally valuable to him.

This year is no exception. The *New (1950) Volume* can hold its own easily among its 40 illustrious predecessors. Here, for example, are just a few of the 215 separate articles you get in this new book:

Differential Diagnosis of Jaundice

Eczema of the Hands

Treatment of Congestive Heart Failure

Results of Classic Operations for Duodenal Ulcer (532 cases)

Mixtures of Protamine Zinc and Regular Insulin

Treatment of Poliomyelitis

Management of Prolonged Labor

The Symptom of Dizziness

Please, Doctor, remember this fact: The *Mayo Clinic Volume* is printed in a limited edition and will not be reprinted. Although copies are just now coming from the bindery, *73% of the print has already been sold* and more orders are pouring in daily. If you want a copy, or think you *might* want a copy, better place your order right now. When present stock is exhausted, you won't be able to obtain one anywhere.

By the Staff of the Mayo Clinic and the Mayo Foundation. 830 pages, 6" x 9", with 130 illustrations. $10.50. *New—Just Ready.*

6-24-50

W. B. SAUNDERS Company, West Washington Square, Philadelphia 5

Please send and charge my account on your Easy Payment Plan for Physicians:

☐ New (1950) Mayo Clinic Volume (Volume XLI)..... $10.50
☐ Cecil's Medicine..... 12.00
☐ Mitchell-Nelson's Pediatrics..... 12.50

Name.....

Address.....

NEW FIFTH EDITION

BAIRD: COMBINED TEXTBOOK OF OBSTETRICS AND GYNECOLOGY

Edited by **DUGALD BAIRD, M.D., F.R.C.O.G.,** *University of Aberdeen: with fourteen contributors*

The new fifth revised and enlarged edition of the former "Kerr and Ferguson" has been almost entirely rewritten and many new illustrations have been added. Emphasis is on the preventive and physiological approach to problems of obstetrics and gynecology, with more attention to functional disorders and minor affections than to major surgery. New chapters on stillbirth, infant mortality and psychological factors have been added. Practical details of treatment are comprehensively covered. The book provides all the instructions necessary for the practitioner and student in the fields of obstetrics and gynecology.

1423 pp., 594 figs., 30 in color, $12.50

OTHER BOOKS ON OBSTETRICS FOR THE GENERAL PRACTITIONER

Third Edition

NOVAK: Textbook of Gynecology

By EMIL NOVAK, M.D., F.A.C.S., *Johns Hopkins University Medical School*

Based on the author's extensive experience as a teacher, pathologist and practicing gynecologist, this has long been considered one of the best texts in the field. Diagnosis and treatment are emphasized throughout, and functional disorders are fully described. 750 pp., 484 figs., many in color, $8.00

Fourth Edition

BECK: Obstetrical Practice

By ALFRED C. BECK, M.D., *Long Island College of Medicine and College Hospital*

In the fourth edition, *Beck* remains the standard work on obstetrics, found to be so valuable to students and practitioners since its first publication. A new chapter on analgesia, amnesia and anesthesia has been added, and the material on implantation and placenta formation has been completely rewritten. Illustrations are again a feature. 976 pp., 1070 figs., $7.00

Second Edition

DICKINSON: Atlas of Human Sex Anatomy

By ROBERT L. DICKINSON, M.D., F.A.C.S.

This unusual topographic atlas presents a great deal about the anatomy and physiology of the reproductive processes not found in the usual textbook of anatomy. The importance of structure in proper functioning is emphasized because physical maladjustment is a major cause for marital failure. 333 pp., 179 figs., $10.00

Third Edition

BROWN and GILBERT: Midwifery

By R. CHRISTIE BROWN, F.R.C.S., *City of London Maternity Hospital; and* BARTON GILBERT, M.D., F.R.C.S., *East Ham Memoral Hospital*

Written for the instruction of obstetrical students and as an easy reference for practitioners, the text emphasizes basic physiologic principles and their application to obstetrics. A new feature of the third edition is a chapter on midwifery in the tropics. 890 pp., 219 figs., $4.00

Tenth Edition

BOURNE: Synopsis of Obstetrics and Gynecology

By ALECK W. BOURNE, F.R.C.S., *London*

Prepared in outline form for convenience, well systematized and illustrated with line diagrams, the book is useful to practitioners as a ready reference. It presents facts in a concise style which gives facts without excess wordage. 517 pp., 167 figs., $4.50

Second Edition

BROWNE: Manual of Practical Obstetrics

By O'DONEL BROWNE, F.R.C.P.I., *Rotunda Hospital, Dublin*

The second edition contains additional material on antenatal care and diet, erythroblastosis fetalis, and the more recent classification of pelvic types and deformities. Brought up to date, it is still concise and practical. 275 pp., 218 figs., 8 plates, $9.00

THE WILLIAMS & WILKINS COMPANY

MT. ROYAL & GUILFORD AVES. BALTIMORE 2, MARYLAND

25th ANNIVERSARY YEAR, 1925-1950

Please send

Baird	$12.50
Novak	8.00
Beck	7.00
Dickinson	10.00
Brown and Gilbert	4.00
Bourne	4.50
Browne	9.00

NAME.....

ADDRESS.....

.....

Acta Inc., Medical Publishers

Montreal, Canada

AVAILABLE MAY 30th

Announces . . .

The publication of an important new book:

STRESS

An extensive monograph on the Physiology and Pathology of the response to systemic stress

Based on the study of the *General-Adaptation-Syndrome*, especially the *Alarm-Reaction* and the *"Diseases of Adaptation"*

by

HANS SELYE

Among the subjects discussed are:

CORTICOID ACTIONS	ACTH ACTIONS
HYPERTENSION	GOUT
NEPHROSCLEROSIS	GASTRO-INTESTINAL ULCERS
RHEUMATIC AND RHEUMATOID DISEASES	PSYCHOSOMATIC PROBLEMS
COLLAGEN DISEASES	ALLERGY
	SURGICAL SHOCK

Special attention has been given to the CLINICAL APPLICATIONS of ACTH and CORTISONE, which have been illustrated by photographs from many North-American clinics now engaged in this work.

Every effort has been made to discuss the most recent publications in this field and numerous hitherto unpublished findings have also been included.

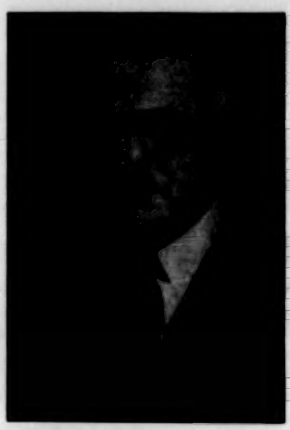
1000 pages, profusely illustrated, about 5,500 references, handsomely bound.

Price: $14.00

For expediency, place orders directly with

ACTA INC.

5465 DECARIE BOULEVARD MONTREAL, CANADA



NICHOLSON J. EASTMAN, Professor of Obstetrics in Johns Hopkins University School of Medicine; and Obstetrician-in-Chief, Johns Hopkins Hospital.

READY JULY 1950

Williams

OBSTETRICS

10th (1950) EDITION

By

NICHOLSON J. EASTMAN

In what is probably the finest revision to date of the famous text originally written by J. Whitridge Williams and revised in its 7th, 8th and 9th Editions by Henricus J. Stander, the present author has taken full advantage of his opportunity to reorganize, rewrite, delete, add new material and reillustrate to the full extent necessary to provide the practicing physician and the student with a complete and thoroughly modern text.

Recognizing the need for continued strong emphasis on sound fundamentals, Dr. Eastman has strengthened those sections and in addition he has built up and considerably enlarged the sections on prenatal care, the treatment of the complications of pregnancy, the handling of the delivery, the details of operative procedures, and the uses of all the most modern, recognized methods for the further necessary reduction of maternal and infant mortality.

Historical data and theoretical considerations have been reduced to an absolute minimum to provide greatly increased space for the more practical type of material needed by the practitioner and student.

Approximately 55 per cent of the text and more than one-third of the illustrations are entirely new. Major sections which have been completely rewritten and brought up to date are those dealing with: the ovarian and placental hormones, placental transfer, estimation of pelvic size and shape, the forces concerned in labor, analgesia and anesthesia, abortion, clinical aspects of placenta previa, treatment of syphilis, diabetes mellitus, the toxemias of pregnancy, the management of uterine inertia, prognosis and management of transverse presentations, prognosis of labor in inlet contraction, midpelvic contraction, rupture of the uterus, postpartum hemorrhage, puerperal infection, apnea neonatorum and hemolytic disease of the newborn. Other sections have been partially rewritten and countless minor alterations made.

SECTION CONTENTS

1. OBSTETRICS IN BROAD PERSPECTIVE
2. ANATOMY AND PHYSIOLOGY OF REPRODUCTION
3. MANAGEMENT OF NORMAL PREGNANCY
4. PHYSIOLOGY AND CONDUCT OF LABOR
5. THE PUERPERIUM AND THE NEWBORN
6. ABNORMALITIES OF PREGNANCY
7. ABNORMALITIES OF LABOR
8. ABNORMALITIES OF THE PUERPERIUM
9. ABNORMALITIES OF THE NEWBORN
10. OPERATIVE OBSTETRICS
SUBJECT INDEX

EASTMAN-WILLIAMS OBSTETRICS. 10th Edition. 696 Illustrations. 1200 Pages. July 1950. $12.50

125th ANNIVERSARY 1825-1950

APPLETON-CENTURY-CROFTS, INC.

35 West 32nd Street • New York 1, New York

Green-Knox

RESEARCH IN MEDICAL SCIENCE

Those changes that are constantly taking place in the field of medical research are discussed by various outstanding representatives in the fields of chemotherapy, therapeutics, physiology, epidemiology, microbiology, anthropology, and allied sciences.

Edited by David R. Green, Ph.D. and W. Eugene Knox, M.D., 482 pp., $6.50

Menninger

PSYCHIATRY IN A TROUBLED WORLD

A first hand story of the evolution of psychiatry, its early struggle and setbacks, its shortcomings, its overall value as a section of war medicine, and its potentialities for the future as told by an outstanding leader in the field. A valuable reference for those wishing to apply psychiatry to military medicine, criminology, industry, and medicine in general.

by William C. Menninger, M.D., 607 pp., $6.00

Penfield-Rasmussen

THE CEREBRAL CORTEX OF MAN

Summarizes our present day knowledge of cerebral function and presents a new point of view from which to study the cerebral cortex of man. Material is based on the review and analysis of over four hundred craniotomies in which the cortex of the human brain was stimulated under local anesthesia.

by Wilder Penfield, M.D. and Theodore Rasmussen, M.D., 248 pp., $6.50

Goldwater

ON HOSPITALS

A collection of the papers of a man who was foremost among consultants, planners, and administrators of the modern hospital. Hospital organization, planning, attitudes, and policies are discussed. Entire sections are devoted to the functions of the medical staff, the medical board, the surgeons, specialists and assistants, and other categories of hospital people.

by S. S. Goldwater, M.D., 398 pp., $5.00

Verhaus

A GUIDE TO GENERAL MEDICAL PRACTICE

A helpful new book taking up the many problems which face the young physician entering general practice. All aspects of medical practice are considered — from selection of internships to development of practice — approaches to frequent clinical problems — and the role of the doctor as a family adviser.

by Martin Verhaus, M.D., 244 pp., $3.50

Leigh-Belton

PEDIATRIC ANESTHESIA

The authors consider herein the special attention required in anesthesia for the infant or child surgical patient. They discuss such factors as preoperative preparation, inhalation anesthesia, agents and technics, and point out clearly how drugs and their employment may be suited proportionately to the child as well as to the adult.

M. Digby Leigh, M.D. and M. Kathleen Belton, M.D., 240 pp., $5.50

Herms

MEDICAL ENTOMOLOGY, 4th ed.

Completely revised, this new edition provides that information essential to a complete knowledge and understanding of epidemiology of disease and resultant public health operations. The latest information on arthropods as vectors of infections of man and animals is included as well as changes in various control techniques.

by William B. Herms, Sc.D., prob. $5.00

Addis

GLOMERULAR NEPHRITIS

After many years of research in connection with clinical practice, Dr. Addis derived the direct method of diagnosis and treatment which he sets forth in this book. Primarily for the practicing physician, the techniques described are those which can be used by a limited clinical team—patient, doctor, and nurse.

by Thomas Addis, M.D., 338 pp., $6.00

The Macmillan Company

60 Fifth Ave., New York 11, N. Y.

Please send to me on approval the books checked below.
I will either remit in full or return the books in 10 days.

☐ Green-Knox: RESEARCH IN MEDICAL SCIENCE
☐ Verhaus: A GUIDE TO GENERAL MEDICAL PRACTICE
☐ Menninger: PSYCHIATRY IN A TROUBLED WORLD
☐ Leigh-Belton: PEDIATRIC ANESTHESIA
☐ Penfield-Rasmussen: THE CEREBRAL CORTEX OF MAN
☐ Herms: MEDICAL ENTOMOLOGY, 4th ed.
☐ Goldwater: ON HOSPITALS
☐ Addis: GLOMERULAR NEPHRITIS

Name .....

Address .....

the new
VOLUME 3

ANOTHER AMA BOOK

QUESTIONS AND ANSWERS

Comprising 517 pages of selected Queries and Minor Notes published in THE JOURNAL from 1943 to 1949.

The various chapters are

1. Air Conditioning and Sanitation
2. Alcohol and Alcoholism
3. Anesthetics, Opiates and Drug Addiction
4. Arthritis and Rheumatism
5. Blood Tests and Blood Diseases
6. Blood Transfusion
7. Burns
8. Cancer
9. Cardiovascular System
10. The Common Cold
11. Diabetes and Carbohydrate Metabolism
12. Drugs and Drug Poisoning
13. Eye Diseases and Vision Tests
14. Female Organs, Menstruation and Menopause
15. Diseases of Gastrointestinal Tract
16. Diseases of Genitourinary Tract
17. Hair and Nails
18. Hay Fever, Asthma and Allergy
19. Hearing
20. Heredity
21. Industrial Poisons and Poisoning
22. Infancy and Childhood
23. Certain Infectious Diseases
24. Insect Bites
25. Liver and Biliary Tract
26. Metabolism; Obesity; Vitamins
27. Mouth and Teeth
28. Musculoskeletal System
29. Nervous System
30. Nose, Sinuses and Tonsils
31. Physiology
32. Pregnancy; Labor; Abortion
33. Sex Problems—Fertility—Sterility
34. Skin Conditions
35. Tobacco and Smoking
36. Tropical and Parasitic Diseases
37. Tuberculosis
38. Undulant Fever
39. Venereal Diseases
40. Virus Diseases
41. X-Ray, Radium and Physical Therapy
42. Miscellaneous

MAIL THIS COUPON NOW

AMERICAN MEDICAL ASSOCIATION
535 NORTH DEARBORN, CHICAGO 10, ILLINOIS

Send me a copy of the new Questions & Answers, Volume 3. I enclose remittance of $3.00.

NAME.....

ADDRESS.....

.....

only $3.00

CONCISE
PRACTICAL
AUTHORITATIVE

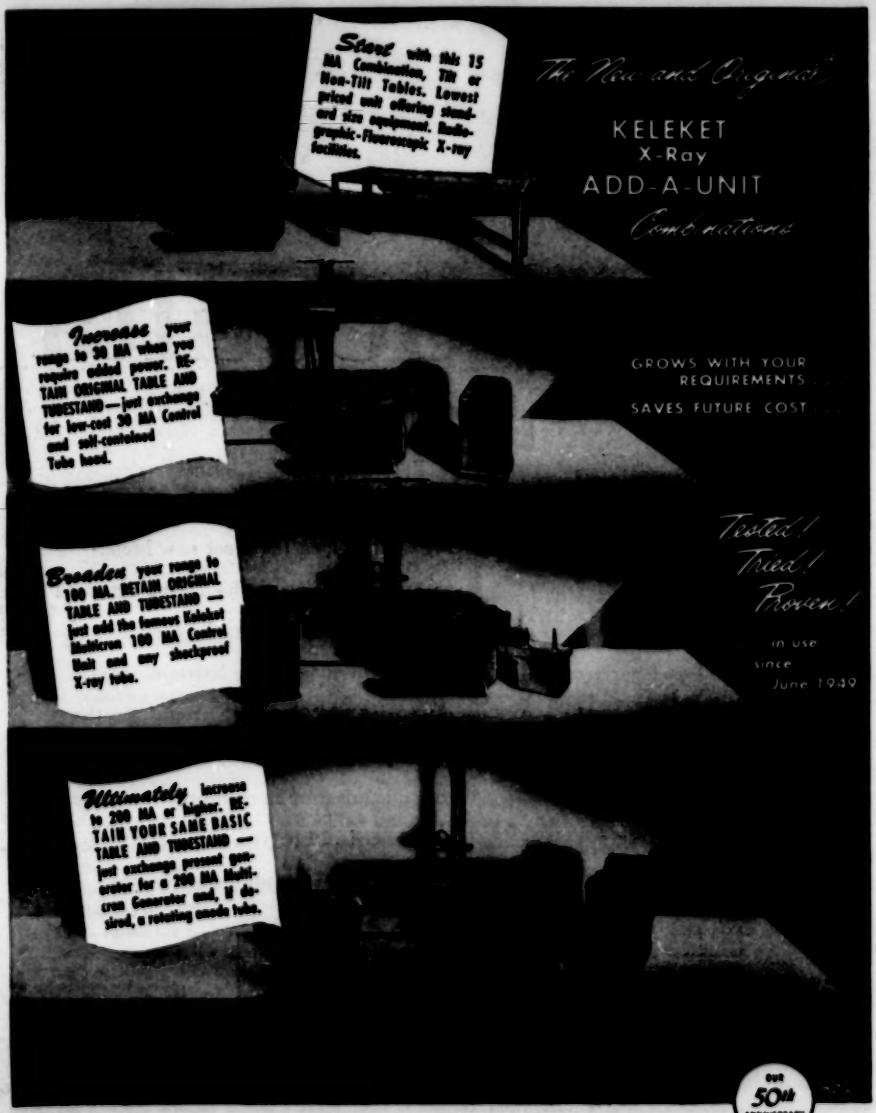
Terra occulta

Only recently has the "mysterious earth" revealed to man the great new broad-spectrum antibiotics which have extended the control of infectious disease caused by specific invaders of the bacterial, viral, rickettsial and protozoan groups. To the development of these vital agents, and to their manufacture in quantities adequate for all needs, Pfizer research and Pfizer production have made contributions.

Pfizer

the world's largest producer of antibiotics

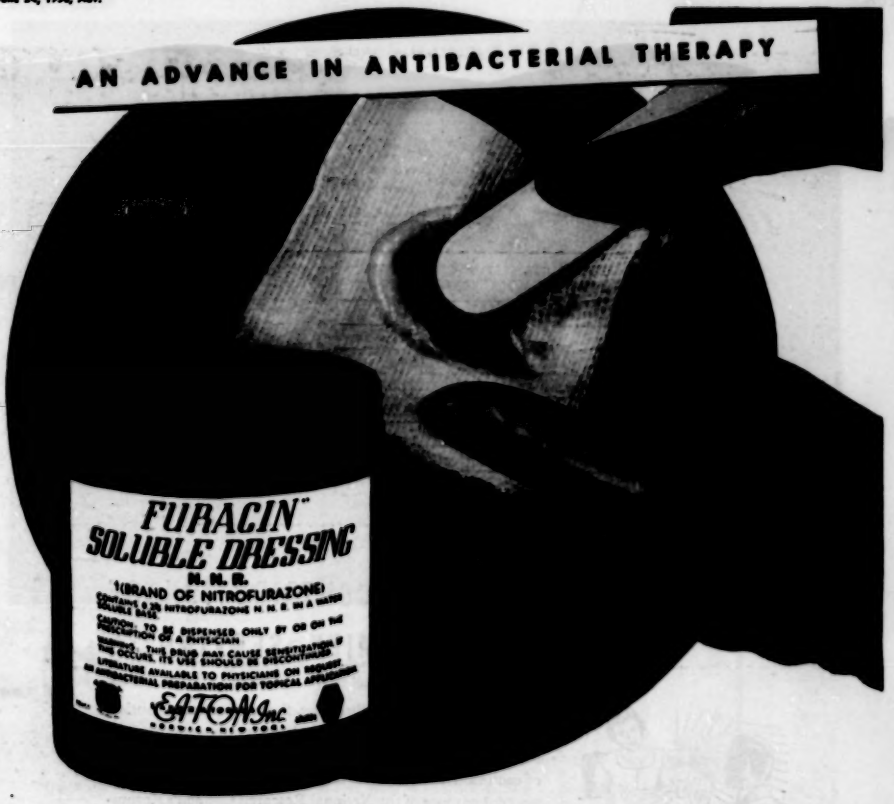
CHAS. PFIZER & CO., INC., *Brooklyn 6, New York*



FREE: Write for new fully illustrated brochure on the Keleket "Add-A-Unit Combinations."

The **KELLEY-KOETT** Manufacturing Co.
3006 WEST FOURTH ST. COVINGTON, KY.

The Oldest Original Name in X-Ray



OVER 500 CASES OF IMPETIGO...

treated with Furacin have now been reported in the literature. Several investigators report good results in over 90% of their cases, often within an average of seven days. Of 30 cases of ecthyma reported, good results were obtained in 24 within the average time of eight to ten days. Sensitization averaged under 5 per cent.

Furacin® brand of nitrofurazone N.N.R. is available in 0.2 per cent concentration in water-miscible vehicles. It is indicated for topical application *in the prophylaxis or treatment of surface infections* of wounds, severe burns, cutaneous ulcers, pyodermas, skin grafts and bacterial otitis. *Literature on request.*

EATON LABORATORIES, INC., NORWICH, N. Y.

The NITROFURANS

Dillaha, W. et al.: Trans. Surv. Coll. 2:47, 1947 • Downing, J. et al.: J.A.M.A. 139:699, 1947; Am. Pract. 2:897, 1948; New England J. Med. 239:82, 1948 • Richenbach, F. et al.: M. Ann. District of Columbia 17:402, 1948 • Johnson, E.: Arch. Dermat. & Syph. 57:548, 1948 • Miller, J. et al.: New York State J. Med. 47:2316, 1947 • Robinson, H. et al.: South. M. J. 40:460, 1947 • Sternberg, T. et al.: Ann. West. Med. & Surg. 2:281, 1948.

FURACIN SOLUBLE DRESSING • FURACIN SOLUTION • FURACIN ANHYDROUS EAR SOLUTION

These Figures Tell the Story

NUTRIENTS and CALORIES	N.R.C. ALLOWANCES* Physically Active Male	CEREAL SERVING CONTRIBUTION**	PER CENT OF DAILY ALLOWANCES
PROTEIN	70 Gm.	7.1 Gm.	10
CALCIUM	1 Gm.	0.156 Gm.	15
IRON	12 mg.	1.6 mg.	13
PHOSPHORUS	1.5 Gm.	0.206 Gm.	14
VITAMIN A	5000 I.U.	193 I.U.	4
THIAMINE	1.5 mg.	0.17 mg.	11
RIBOFLAVIN	1.8 mg.	0.24 mg.	13
NIACIN	15 mg.	1.4 mg.	9
CALORIES	3000	202	7

OF THE NUTRIENT CONTRIBUTION OF THE CEREAL AND MILK SERVING...

As the table above vividly shows, the nutrient contribution of the cereal and milk serving** is unusually generous, not only as to the number of nutrients, but also as to the amount of each nutrient supplied. In the case of most nutrients, 10 per cent or more of the National Research Council's Recommended Daily Dietary Allowances for a physically active male is supplied by this serving. Of added nutritional significance is its generous contribution of B complex vitamins and iron, and the high calcium content.

The cereal and milk serving, a favorite American main course at breakfast, is outstanding in these respects also: it offers noteworthy economy, unusual ease of preparation, and almost endless variety for renewed palate appeal.

*National Research Council's Recommended Daily Dietary Allowances.

**1 oz. of breakfast cereal, 4 oz. of milk, 1 teaspoonful of sugar. Based on composite average of all breakfast cereals on dry weight basis.

The presence of this seal indicates that all nutritional statements in this advertisement have been found acceptable by the Council on Foods and Nutrition of the American Medical Association.

CEREAL INSTITUTE, INC.

135 South La Salle Street • Chicago 3

A RESEARCH AND EDUCATIONAL ENDEAVOR DEVOTED TO THE BETTERMENT OF NATIONAL NUTRITION

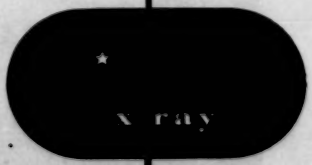
...but what's best for me in x-ray?

"What's best for me in x-ray? What kind, how much?" **The right answer to this question is important... you'll have to live with it... work with it... depend on it. You'd like to keep your x-ray outlay at a minimum: still want to be sure that the equipment you buy can do all the things you'll need to do, now and later.**

In short, you're at the point where it would be prudent to call for experienced counsel . . . and your local Picker representative is the man who can offer it to you. He's analyzed and solved dozens of problems like yours. He's primed to *serve* you, not pressured to *sell* you. In your own best interest call in your local Picker man before you come to *any* decision on *any* x-ray apparatus: then judge for yourself.
Picker X-Ray Corporation, 300 Fourth Avenue, New York 10.
(Branches and Service Depots in principal cities)

Fluoroscope the "Meteor" the "Century" the "1225" the "Constellation"

these are some of the x-ray units in the wide Picker line



all you expect . . . and more

OFFICERS OF THE AMERICAN MEDICAL ASSOCIATION, 1949-1950

President—Ernest E. Irons, Chicago.
President-Elect—Elmer L. Henderson, Louisville, Ky.
Vice-President—James D. Norton, Jersey City, N. J.
General Secretary and Executive Vice-President—George F. Lull, Chicago.
Asst. Secretary—Ernest B. Howard, Chicago.
Treasurer—[illegible], Chicago.
Speaker, House of Delegates—[illegible] F. Sorrell, Philadelphia.
Vice-Speaker, House of Delegates—James R. Reuling, Bayside, N. Y.
Editor—Austin Smith, Chicago.
Business Manager—Thomas E. Gardiner, Chicago.
Board of Trustees—John H. Pruett, Portland, Ore., 1950; James R. Miller, Hartford, Conn., 1950; Walter P. Martin, Norfolk, Va., 1951; Dwight H. Murray, Napa, Calif., 1952; E. J. McCormick, Toledo, Ohio, 1952; Edwin R. Hamilton, Kendallville, Ill., 1953; Quentin C. Gardner, LaCrosse, Wis., 1953; Louis H. Bauer, Chairman, Hempstead, N. Y., 1954; F. J. L. Blasingame, Wharton, Texas, 1954.
Judicial Council—Louis A. Buie, Rochester, Minn., 1950; Walter P. Jones, Memphis, 1951; H. L. Pearson Jr., Minot, N.D., 1952; Hugh Cabot, Ann Arbor, Mich., 1953; Edward R. Cunniff, Chairman, New York, 1954; George F. Lull, Chicago, Secretary.
Council on Medical Education and Hospitals—Russell L. Haden, Crozet, Va., 1950; W. H. Middleton, Madison, Wis., 1951; H. G. Weishaupt, Chairman, Syracuse, N. Y., 1952; Victor James, Rochester, Minn., 1953; W. L. Prewitt, Des Moines, Iowa, 1954; Harvey B. Stone, Baltimore, 1955; Guy L. Caldwell, New Orleans, 1956; Donald G. Anderson, Secretary, Chicago.
Council on Industrial Health—Harry A. Vietz, Chairman, Boston, 1950; L. W. Larson, Bismarck, N. D., 1951; Stanley P. Reimann, Philadelphia, 1952; Alphonse McMahon, St. Louis, 1953; Charles E. Potter, Chicago, 1954; Carl J. Lieske, Carrollton, Ohio, 1955; Michael L. Dunkley, Akron, Ohio, 1956; and ex officio the President-Elect, the Editor and the Secretary of the Association.
Council on Medical Service—Ivy L. Bierring, Phoenix, Ariz., 1950; James R. McVay, Chairman, Kansas City, Mo., 1950; H. B. Mahaffey, Charlottesville, Va., 1951; Joseph D. McCarthy, Omaha, 1951; Elmer Hess, Erie, Pa., 1952; Thomas A. McGoldrick, South Bend, Ind., 1952; Ernest E. Irons, Chicago; Walter B. Martin, Norfolk, Va.; George F. Lull, Chicago; Truman A. Hendricks, Secretary, Chicago.
Council on Pharmacy and Chemistry (Standing Committee of Board of Trustees)—Torald Sollmann, Chairman, Cleveland, 1951; Isaac Starr, Philadelphia, 1951; Joseph Hayman, Cleveland, 1951; E. M. K. Geiling, Chicago, 1952; S. W. Clausen, Rochester, N. Y., 1952; Paul R. Cannon, Chicago, 1953; W. C. Cutting, San Francisco, 1953; Joseph Stokes Jr., Philadelphia, 1953; C. Guy Lane, Boston, 1953; Carl A. Dregstedt, Chicago, 1953; James P. Leake, Washington, D. C., 1954; George W. Thorn, Boston, 1954; Henry K. Beecher, Boston, 1954; M. Pinkerton, Chicago, 1955; O. W. McCue, New Orleans, 1955; F. H. Lahey, Baltimore, 1955; E. H. Nolan, Washington, D. C., 1955; Robert T. Stormont, Secretary, Chicago.
Council on Physical Medicine and Rehabilitation (Standing Committee of Board of Trustees)—W. B. Gurney, Nashville, Tenn., 1951; W. W. Coleman, Washington, D. C., 1951; W. J. Ketter, Cleveland, 1951; Dietrich Veit, Chicago, 1951; W. E. Green, Milwaukee, 1951; A. C. Fry, Chicago, 1952; Frank R. Ober, Boston, 1952; Frank D. Dickson, Kansas City, Mo., 1952; Howard A. Rusk, New York, 1953; James R. Wilson, Chairman, Rochester, Minn., 1953; Melchie Warren, Bonham, 1953; Anthony C. Cipollaro, New York, 1954; M. A. Bowie, Swarthmore, Pa., 1954; G. M. Piersol, Philadelphia, 1954; Howard A. Carter, Secretary, Chicago.
Council on Foods and Nutrition (Standing Committee of Board of Trustees)—E. M. Wilder, Rochester, Minn., 1951; Howard B. Lewis, Ann Arbor, Mich., 1951; J. H. McLester, Chairman, Birmingham, Ala., 1951; Philip Jones, Iowa City, 1952; C. A. Elvehjem, Madison, Wis., 1952; William J. Darby, Nashville, Tenn., 1953; George R. Cowgill, New Haven, Conn., 1953; C. R. Lamb, Washington, D. C., 1954; John R. Murlin, Secretary, Chicago, 1954; Charles S. Davidson, Boston, 1955.
Council on Industrial Health (Standing Committee of Board of Trustees)—L. D. Bristol, Harrisburg, Pa., 1951; Paul R. Hawley, Chicago, 1951; Robert A. Kehoe, Cincinnati, 1951; Harold A. Vonachen, Peoria, Ill., 1952; W. A. Sawyer, Rochester, N. Y., 1952; James P. Simmons, Boston, 1952; Rutherford T. Johnstone, Los Angeles, 1953; Arthur J. Lamb, Chairman, New York, 1953; C. D. Selby, Detroit, 1953; Warren F. Draper, Washington, D. C., 1954; O. A. Seaser, Milwaukee, 1954; Henry K. Kessler, Newark, N. J., 1954; E. J. McCormick, Toledo, Ohio, ex officio; C. Guy Lane, Secretary, Chicago.
Council on National Emergency Medical Service (Standing Committee of Board of Trustees)—Harold H. Diehl, Minneapolis, 1950; Perrin H. Long, Baltimore, 1951; Harold C. Leach, Jacksonville, 1951; Leonard Larson, Chairman, Milwaukee, 1952; Stafford Warren, Los Angeles, 1953; Herbert R. Wright, Cleveland, 1954; and ex officio the President and the Secretary of the Association; Robert H. Hall, Chicago, Secretary.
Committee on Scientific Exhibit—E. J. McCormick, Toledo, Ohio; Dwight H. Murray, Chairman, Napa, Calif.; F. J. L. Blasingame, Wharton, Texas; Vincent C. Hall, Director, Chicago; ex officio, Committee Hospital P. Lee, Philadelphia; Paul T. Hamilton, San Francisco; Ludvig Hektoen, Chicago; Urban Maes, New Orleans; H. J. Corper, Denver, Colo.; James P. Leake, Washington, D. C.

OFFICERS OF SECTIONS, 1949-1950

Internal Medicine—Chairman, Arthur L. Bloomfield, San Francisco; Secretary, Walter L. Palmer, 550 E. 59th Street, Chicago 37.

Surgery, General and Abdominal—Chairman, Michael E. DeBakey, Houston, Texas; Secretary, I. Sidgwick Tillman, 8 W. Madison Street, Baltimore.

Obstetrics and Gynecology—Chairman, James R. Bloss Huntington, W. Va.; Secretary, Arthur H. Hunt, 102 Second Avenue S.W., Rochester, Minn.

Ophthalmology—Chairman, A. Ray Irvine, Beverly Hills, Calif.; Secretary, Trygve Gunderson, 107 Bay State Road, Boston 15.

Laryngology, Otology and Rhinology—Chairman, William H. Johnston, Santa Barbara, Calif.; Secretary, J. Milton Robb, 1553 Woodward Avenue, Detroit 26.

Pediatrics—Chairman, Margaret Mary Nicholson, Washington, D. C.; Secretary, Wyman C. C. Cole, 3091 W. Grand Boulevard, Detroit 2.

Experimental Medicine and Therapeutics—Chairman, McKee Cattell, New York; Secretary, Carl V. Moore, 600 S. Kingshighway Boulevard, St. Louis.

Pathology and Physiology—Chairman, F. W. Konwinnann, Atlantic City, N. J.; Secretary, Edwin F. Hirsch, 1439 S. Michigan Avenue, Chicago.

Nervous and Mental Diseases—Chairman, Frederick P. Moersch, Rochester, Minn.; Secretary, Francis M. Forster, 1025 Walnut Street, Philadelphia 7.

Dermatology and Syphilology—Chairman, Clinton W. Lane, St. Louis; Secretary, John H. Lamb, 117 N. Broadway, Oklahoma City.

Preventive and Industrial Medicine and Public Health—Chairman, Carl N. Haupert, Madison, Wis.; Secretary, Jean S. Felton, Oak Ridge National Laboratory, Oak Ridge, Tenn.

Urology—Chairman, Edward N. Cook, Rochester, Minn.; Secretary, Earl E. Bowt, 605 Commonwealth Avenue, Boston 15.

Orthopedic Surgery—Chairman, Joseph B. Barr, Boston; Secretary, Charles N. Peirce, 101 S. Michigan Boulevard, Chicago.

Gastro-Enterology and Proctology—Chairman, Russell S. Boles, Philadelphia; Secretary, Donovan C. Brown, 2520 St. Charles Avenue, New Orleans.

Radiology—Chairman, U. V. Portmann, Cleveland; Secretary, Paul C. Hodges, 950 E. 59th Street, Chicago.

Anesthesiology—Chairman, Fred W. Clement, Toledo, Ohio; Secretary, John S. Lundy, 102 Second Avenue S.W., Rochester, Minn.

General Practice—Chairman, Milton B. Cantrell, Kansas City, Mo.; Secretary Thomas R. Robinson, 1000 E. 21st South Street, Salt Lake City.

Diseases of the Chest—Chairman, Walter E. Vest, Huntington, W. Va.; Secretary Jay A. Myers, 91 S. Seventh Street, Minneapolis 2.

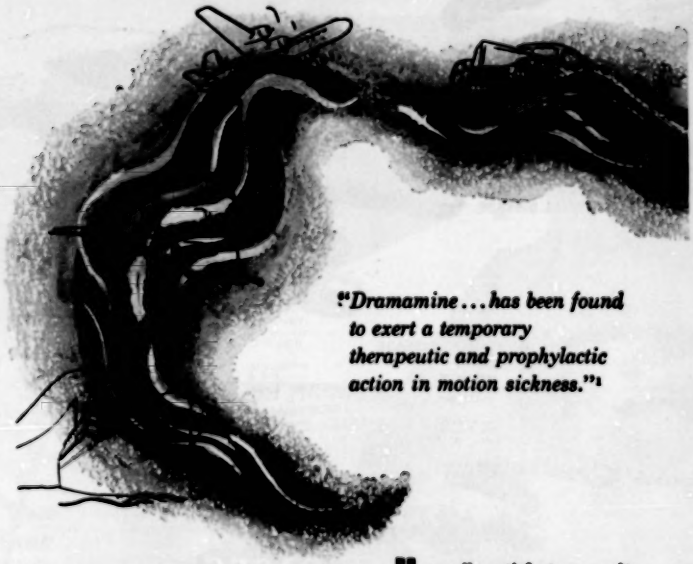
Physical Medicine and Rehabilitation—Chairman, Frank H. Krusen, Rochester, Minn.; Secretary, Howard A. Rusk, New York Times, Times Square, New York 18.

non-barbiturate sedative

prescribe Bromural for daytime sedation, one tablet every three to five hours. For sleep, 2 or 3 tablets upon retiring or when wakeful during the night.

BROMURAL, brand of Bromisovalum, monobromisovalerylurea, is available as 5-grain tablets and in powder form.

Bilhuber-Knoll Corp.
ORANGE, NEW JERSEY



"Dramamine . . . has been found to exert a temporary therapeutic and prophylactic action in motion sickness."[1]

Dramamine

for the Prevention or Treatment of Motion Sickness

Unusually satisfactory results have been obtained with Dramamine* (brand of dimenhydrinate) as a prophylactic or active therapeutic agent for the relief of nausea, vomiting or dizziness, which many individuals experience in travelling by ship, airplane, train and other vehicles.

1. Council on Pharmacy & Chemistry: New and Nonofficial Remedies, 1950, Philadelphia, J. B. Lippincott Co., 1950, p. 460.

*Trademark of G. D. Searle & Co., Chicago 80, Ill.

SEARLE RESEARCH IN THE SERVICE OF MEDICINE

Versatile protein

for patients of all ages...

MEADS

MEAD JOHNSON & COMPANY

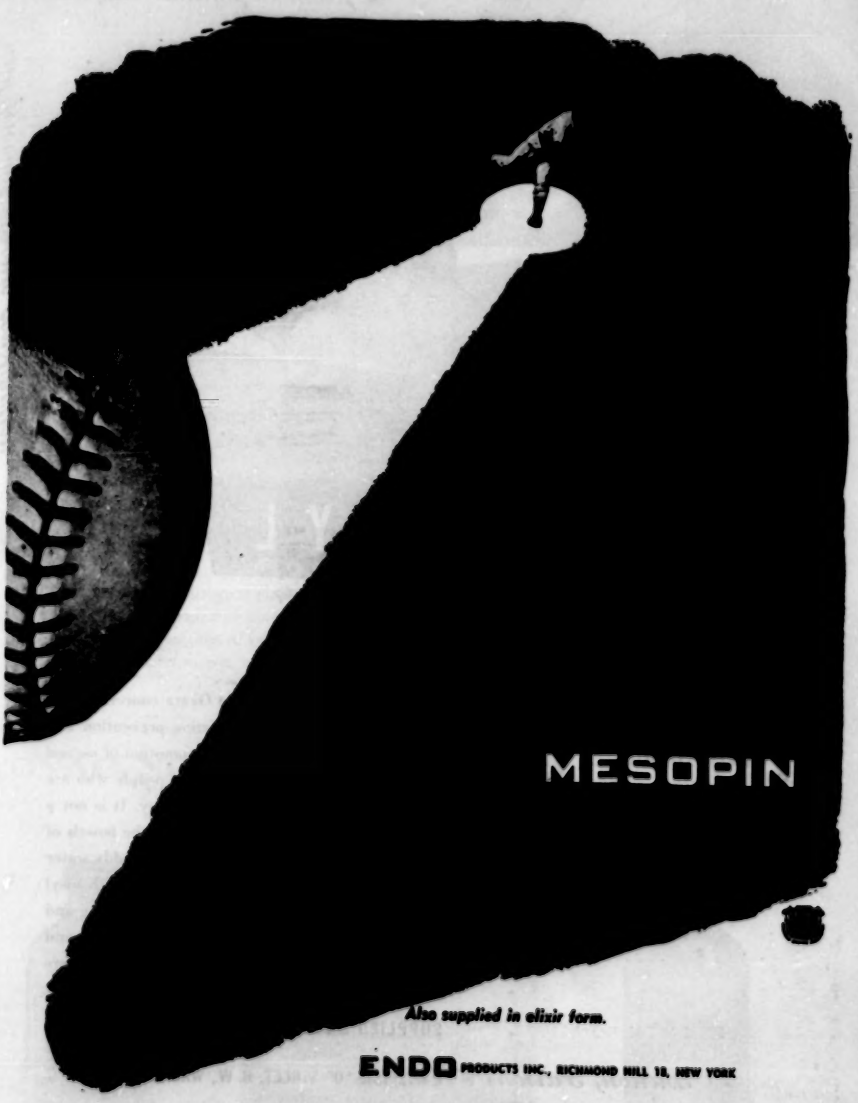
Casec* is a concentrated protein food, containing 88% high quality protein. It is low in fat, low in bulk, and generous in its contributions of calcium and phosphorus.

For almost three decades Casec has served as a reliable aid in the symptomatic relief of infantile diarrhea and colic.

It is equally valuable as a dietary supplement in the many conditions where a high protein, low fat diet is indicated.

Casec blends easily with liquids or solid foods without changing their natural flavor. Infant formula tables and a booklet containing numerous delicious, high protein recipes incorporating Casec are available on request.

*T.M. Reg. U.S. Pat. Off.



Also supplied in elixir form.

ENDO PRODUCTS INC., RICHMOND HILL 18, NEW YORK

to promote normal evacuation

and prevent chronic constipation

KONSYL

the mucilaginous coating of plantago ovata (blond *psyllium seed).

Konsyl, the original Plantago Ovata concentrate, is designed for the safe and effective prevention and control of constipation and the promotion of *normal* evacuations . . . designed for those people who are obliged to "take something" every day. It is not a laxative in the sense that it will move the bowels of one who is constipated but, because it adds water and lubrication to the intestinal contents, Konsyl promotes normal peristalsis. Non-habit forming and easy to take, economical Konsyl produces soft and easily evacuated stools. Try it in the next case where it is applicable. Send for samples and literature now.

SUPPLIED in 6 oz. and 12 oz. packages.

Burton, Parsons & Co., 1515 "U" STREET, N. W., WASHINGTON 9, D. C.

Plasma is specific for treatment of traumatic

for the "seldom but serious"

Traumatic shock, fortunately, is a condition rather seldom encountered, but it is serious when it does occur, and supportive treatment must be prompt. That's one reason why LYOVAC® Plasma (Irradiated) should always be kept near at hand. LYOVAC Plasma is stable without refrigeration and may be safely stored at room temperature. It's quickly prepared for use in emergencies, and needs no typing or cross-matching, because it is *pooled* plasma. And finally, it is irradiated by the process described by Blanchard and his associates* and thus, according to this report, markedly reduces the risk to your patient of acquiring homologous serum hepatitis. LYOVAC Normal Human Plasma (Irradiated) is supplied desiccated in vacuum bottles to yield 50 cc., 250 cc. and 500 cc. of normal or *isotonic* plasma (660 mg. of *gamma globulin* per 100 cc.), or smaller quantities of *hypertonic* plasma. Sharp & Dohme, Philadelphia 1, Pa.

*J.A.M.A. *138*:341, 1948.

LYOVAC® NORMAL HUMAN PLASMA

(IRRADIATED)

next to nature . . .

Delvinal®

Sodium Vinbarbital

Natural sleep probably occurs within 2 seconds of the last conscious moment. DELVINAL® sodium vinbarbital requires twenty to thirty minutes to act, but the actual induction and aftermath of sleep are very much like those of nature, with little or no "drugged" sensation, post-hypnotic excitement or "hangover." Moreover, there is no adverse effect on circulation or respiration, no evidence of pathologic changes in blood or urine.

SHARP & DOHME

Indications: Functional insomnia, general, psychiatric, and presurgical sedation, obstetric amnesia.
Dosage Forms: Dry-filled Capsules, 30 mg. (½ gr.), 0.1 Gm. (1½ gr.), 0.2 Gm. (3 gr.); *Elixir*, 0.25 Gm. (4 gr.) per fluidounce in *Spasaver*® pints; *Powder*, 15 Gm. (½ oz.) bottles; 5-cc. ampuls and 20-cc. vials *Sterile Solution* for intravenous use, 60 mg. (1 gr.) per cc.
Sharp & Dohme, Philadelphia 1, Pa.

V 1
195

Nisulfazole
does not cure Chronic Ulcerative Colitis!

● This new, specialized sulfonamide *does* raise to a higher standard the chemotherapeutic aspect of the "truly miserable affliction."

A recent finding has been advanced as the immediate cause of nonspecific ulcers in the colon. If sustained, this engaging concept will remove much of the unruliness of the disease; the unpredictability of treatment.

Meanwhile the proven facts have led clinicians to say that "Nisulfazole has given better results than any therapy previously used." And "its efficacy in controlling the active stages of ulcerative colitis is unquestioned."

Nisulfazole (paranitrosulfathiazole) carries a nitro radical on its benzene nucleus. It is easily administered directly into the colon, to act locally. It does not enter the circulation significantly; no systemic toxicity is seen, even though administration is continued.

Nisulfazole®

10% Suspension

is supplied in wide mouth bottles of 296 cc (10 fl. oz.)

George A. Breon & Company

KANSAS CITY, MISSOURI
RENSSELAER, N. Y.
ATLANTA
SAN FRANCISCO

GOVERNMENT SURPLUS

SPECIAL COMBINATION OFFER BONE SET

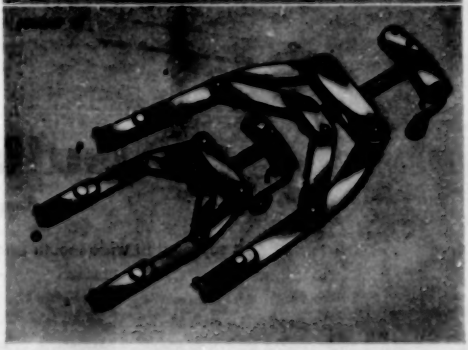
$24.75

Special Combination Bone Set, $24.75

(Groups 1 and 2)

We have acquired from Government Surplus a number of sets of these first quality bone instruments. Their low cost to us permits passing the extraordinary savings on to you. Make your own comparisons; in each case we have given you the current market price for the identical instruments, as well as the huge percentage of the current price which you save. After our Government Surplus stocks have been exhausted, prices of these items will, of course, return to today's regular market prices.

JB128—Combination Bone Set; consists of one each of items shown in group illustrations 1 and 2: Kirschner Hand Drill, chromium-plated body, stainless steel chuck (A); Chuck Handle (B); one each of Bohler-Steinman Pin Holders (C and D), medium adult and child's; Bone Screw Driver (E); Kirschner Traction Bow, large (F); Kirschner Traction Bow, chrome-plated, medium (G); current total value of above set, $110.00; special, a 77% saving at, per set..... $24.75



Kirschner Hand Drill in Special Bone Set, $14.75

(Group 1)

JB134A—Kirschner Special Bone Set, consisting of one each of following items: Kirschner Hand Drill (A); Chuck Handle (B); one each of the stainless steel Bohler-Steinman Pin Holders (C and D), medium adult and child sizes; and Bone Screw Driver (E); current total value, $71.00; special, 79% saving at, per set..... $14.75

A. S. ALOE COMPANY

General Offices: 1831 Olive Street, St. Louis 3, Mo.

Branches: Los Angeles, New Orleans, Kansas City, Minneapolis, Washington, D. C.

Artist's rendering of entrance to the Medical School of New York University, New York, N.Y.

New York State Journal of Medicine Reports on

Sulfadiazine

The importance of sulfadiazine to therapeutics is reflected by the publication in this journal of thirty-six articles touching on its use in a varied group of conditions. Frequently mentioned has been its usefulness in otolaryngology.

NEW YORK STATE JOURNAL OF MEDICINE *This journal was founded just 50 years ago by the New York State Medical Association under the joint editorship of Dr. L. H. Wiggin and Dr. J. H. Bartemeier, and took the place of the annual volume of Transactions. In addition to association items, the journal publishes scientific articles of interest to the practicing physician. A valuable feature is the monthly article on "Medical Progress" in various fields.*

LEDERLE LABORATORIES DIVISION *AMERICAN CYANAMID COMPANY* 30 Rockefeller Plaza, New York 20, N. Y.

Proven over 30 years as an ideal milk modifier KARO combines efficacy and economy

Physicians have long recognized KARO* Syrup as a perfect carbohydrate...and parents have earnestly appreciated its modest cost. KARO is a mixture of dextrose, maltose and dextrins...each assimilated at its own intestinal level. This helps prevent fermentation...promotes absorption...precludes irritation. KARO is convenient . . . easy-to-use. Prescription blanks sent on request.

Medical Division

CORN PRODUCTS REFINING COMPANY

17 Battery Place **New York, N. Y.**

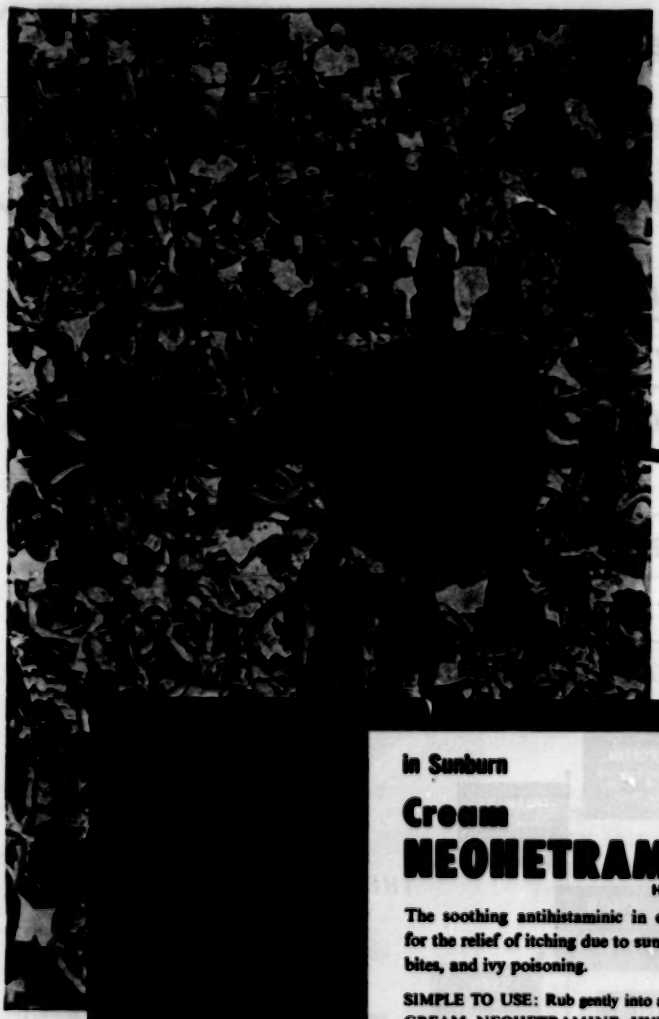
CLINICAL POINTERS

KARO completely provides the carbohydrate needs of infants. Prescribe it in any formula to fulfill total caloric requirements effectively.

KARO is well tolerated... may be safely prescribed for the premature...well or sick infants.

KARO is easily digested ...without inducing intestinal irritation, fermentation or distention. Prescribe KARO with confidence for satisfactory weight gains in all infants.

KARO Syrup is readily available at food stores everywhere.



In Sunburn

Cream NEOHETRAMINE

Hydrochloride

The soothing antihistaminic in cream form for the relief of itching due to sunburn, insect bites, and ivy poisoning.

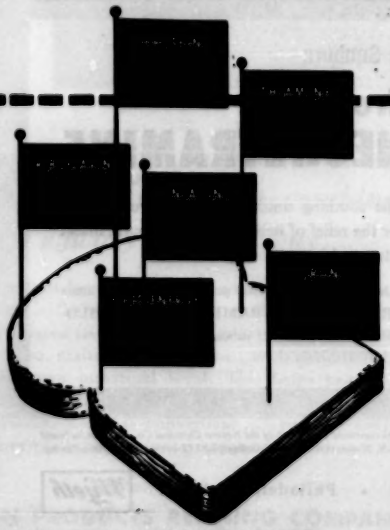
SIMPLE TO USE: Rub gently into affected areas **CREAM NEOHETRAMINE HYDROCHLORIDE, 2%:** in 1 oz. tubes.

Neohetramine is the registered trademark of the Nepera Chemical Co., Inc., for its brand of thenyldiamine—N, N-dimethyl-N'-p-methoxybenzyl-N'-(2-pyridyl) ethylenediamine.

Wyeth Incorporated • Philadelphia 3, Pa.

SOUND ADVICE for normal persons desiring to reduce is contained in the following statement accepted by the Council on Foods and Nutrition of the American Medical Association:

IF YOU'RE DIETING TO LOSE WEIGHT, *remember that calories are what you want to cut, not essential vitamins and mineral nutrients. The thiamine, niacin, riboflavin and iron in enriched bread and flour help you keep fit while you're reducing.*



THERE'S **6-way nourishment** IN **ENRICHED** BREAD AND FLOUR

Copr. 1950, by Wheat Flour Institute, 309 W. Jackson Blvd., Chicago 6, Ill.

when pregnancy is contraindicated . . .

A COMPARATIVE STUDY

THE EFFICACY OF THE SUPPOSITORY FOR CONCEPTION CONTROL

"Hence, the conclusion would seem inescapable that these latter methods—especially the suppository, the simplest of them all—deserve more widespread trial than they have heretofore received."*

The Suppository Technic.—In a Baltimore clinic, use of the simple, Lorophyn Suppository technic produced a rate of *16.2* pregnancies per 100 woman-years of exposure to the opportunity of becoming pregnant. This rate was compared to some reported in the literature with diaphragm and jelly: 12, 15, 18 and 33. Over 300 patients were studied for periods of from six months to over two years.

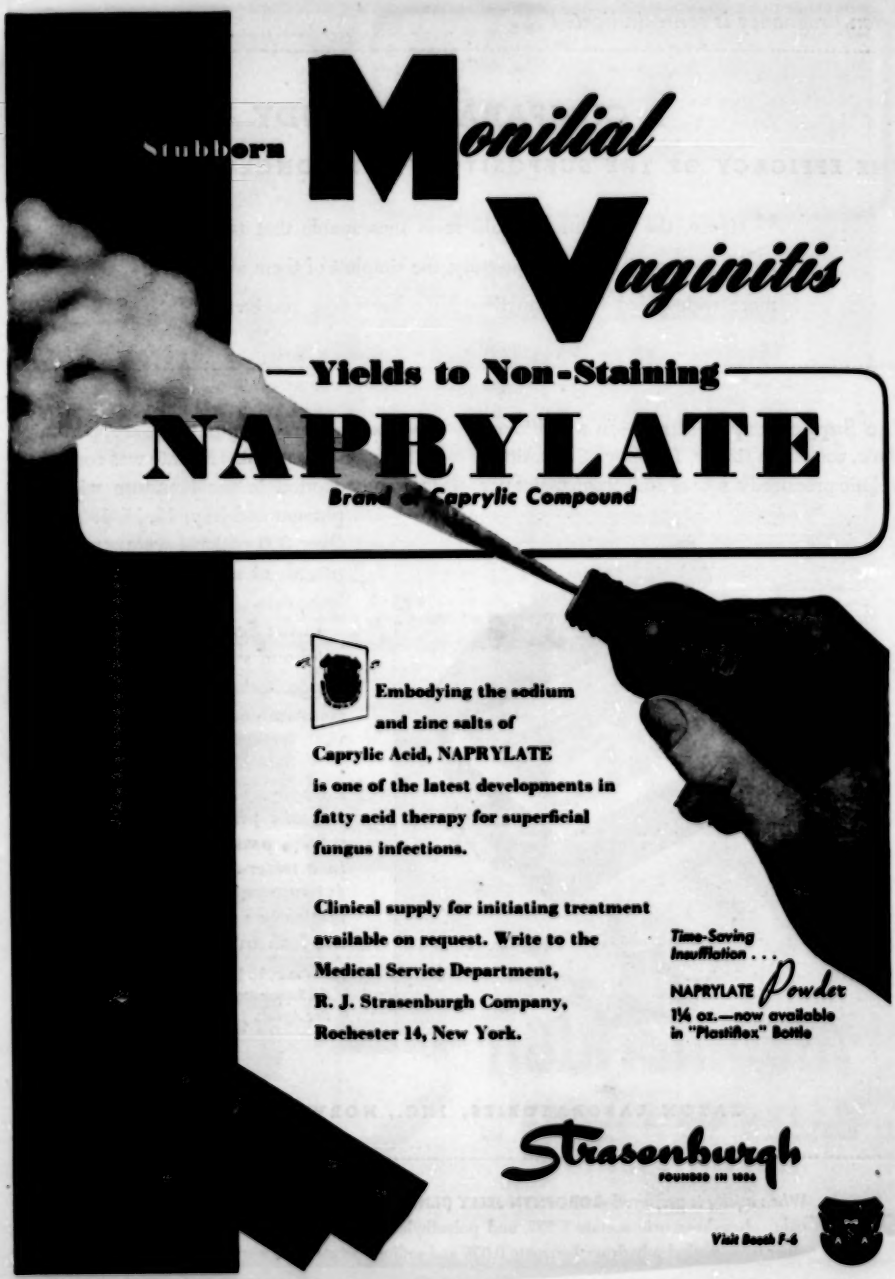
In the South Carolina State postnatal and syphilis clinics, Lorophyn Suppositories were shown to have comparable effectiveness.

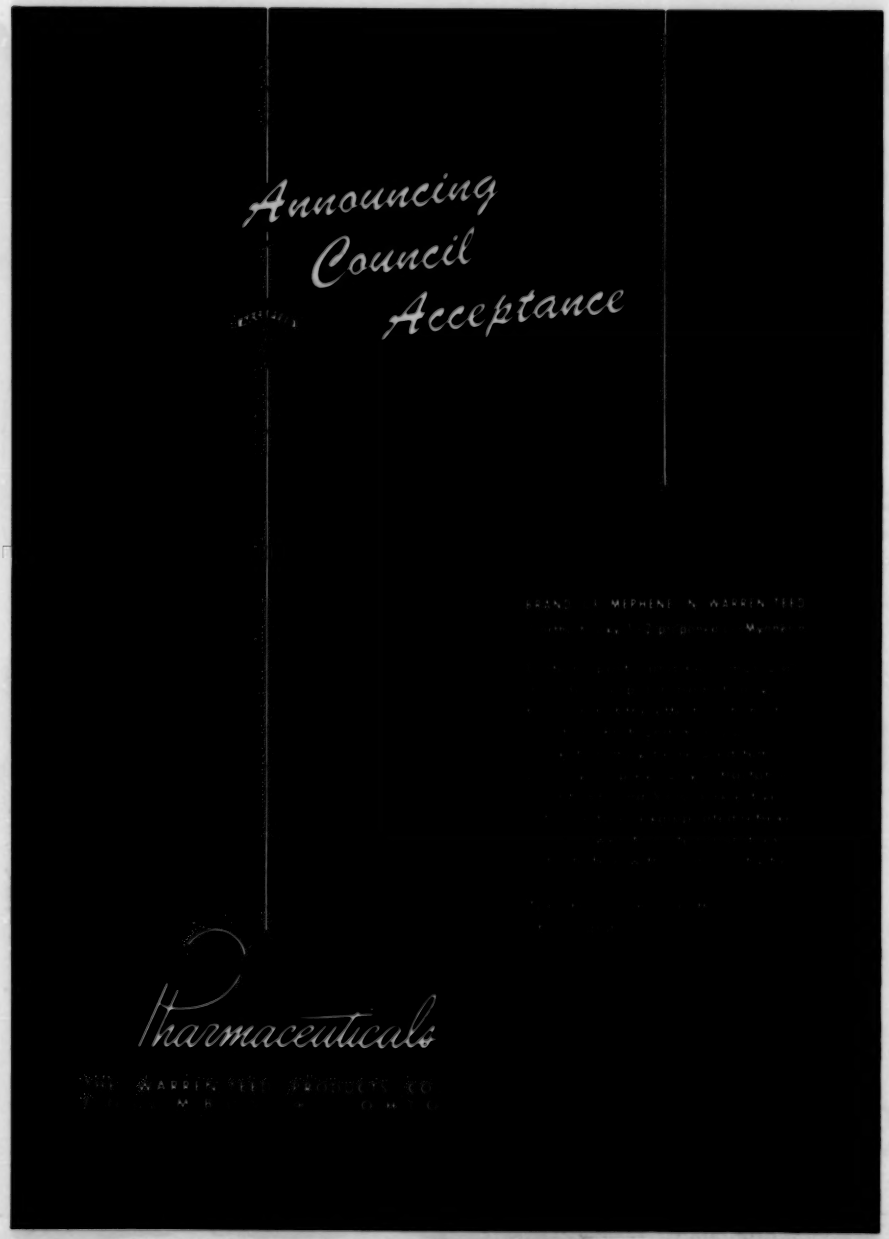
Lorophyn® Suppositories (N.N.R.) contain phenylmercuric acetate 0.05% and glyceryl laurate 10% in a water-dispersible, self-emulsifying, synthetic wax base. Hermetically sealed in foil, they will not leak in hot weather.

*Eastman, N. J. & Seibels, R. E.: *The Efficacy of the Suppository and of Jelly Alone as Contraceptive Agents*, J. A. M. A. 139:16 (Jan. 1) 1940. Reprint on request.

EATON LABORATORIES, INC., NORWICH, N. Y.

When a jelly is preferred—**LOROPHYN JELLY (N.N.R.)** also contains the powerful spermicide: phenylmercuric acetate 0.05%, and polyethylene glycol of mono-iso-octyl phenyl ether 0.3%, methyl p-hydroxy benzoate 0.05% and sodium borate 3% in a special jelly base.


Stubborn
Monilial
Vaginitis
—Yields to Non-Staining
NAPRYLATE
Brand of Caprylic Compound
Embodying the sodium and zinc salts of Caprylic Acid, NAPRYLATE is one of the latest developments in fatty acid therapy for superficial fungus infections.
Clinical supply for initiating treatment available on request. Write to the Medical Service Department, R. J. Strasenburgh Company, Rochester 14, New York.
Time-Saving Insufflation . . .
NAPRYLATE Powder
1¼ oz.—now available in "Plastiflex" Bottle
Strasenburgh
FOUNDED IN 1886
Visit Booth F-6

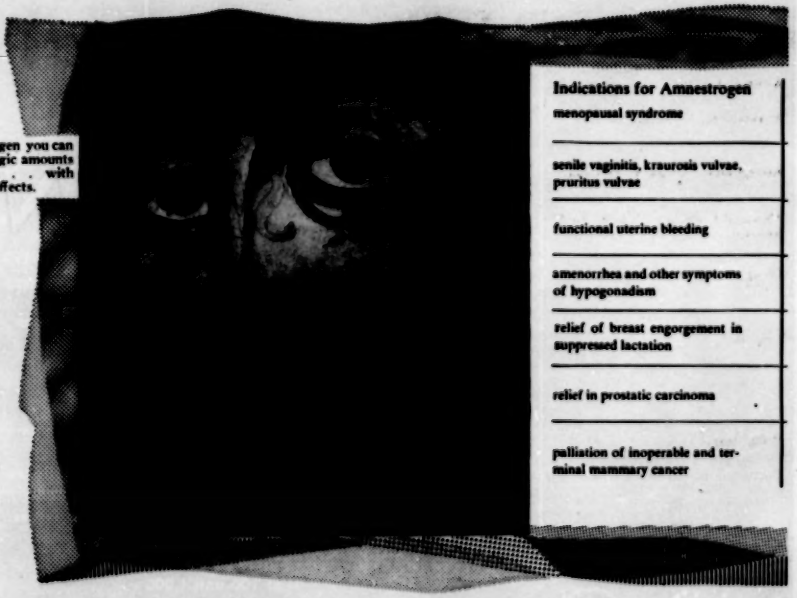


VISIT OUR SPACE AT THE A.M.A. CONVENTION—C-17 AND C-19

Whenever estrogens are indicated...

Amnestrogen . .

With Amnestrogen you can replace physiologic amounts of estrogens . . . with minimal side effects.



Indications for Amnestrogen

- menopausal syndrome
- senile vaginitis, kraurosis vulvae, pruritus vulvae
- functional uterine bleeding
- amenorrhea and other symptoms of hypogonadism
- relief of breast engorgement in suppressed lactation
- relief in prostatic carcinoma
- palliation of inoperable and terminal mammary cancer

whenever estrogens are indicated... Amnestrogen

. *for a complete, smooth estrogenic effect*

The potency of Amnestrogen is expressed as sodium estrone sulfate—a true steroid hormone. It is smooth-acting and naturally occurring; water-soluble, and rapidly absorbed.

AVERAGE DOSE—One 1.25 mg. tablet daily or 0.625 mg. twice daily or 0.3 mg. four times daily.
ACUTE CASES—2.5 mg. daily, or 1.25 mg. twice daily. for 1 or 2 weeks and thereafter the smallest dose which will prevent return of symptoms.

Average dose—1.25 mg. or more daily.

7.5 mg. daily for 3 to 5 days or until bleeding stops; non-endocrine causes to be first excluded. Alternating therapy with progesterone should be considered.

Dosage individualized according to development of secondary sex characteristics. In amenorrhea —1.25 to 3.75 mg. daily for 24 days, accompanied by progesterone therapy.

---

5 mg. daily for 2 or more days.

Not less than 3.75 mg. daily for several weeks; then halve the dosage.

---

30 mg. daily;* for at least 2 months for subjective response and 3 months for objective response. Estrogens should not be given to a woman with breast cancer who is less than 5 years postmenopausal or whose disease is amenable to surgery or roentgen ray. *[illegible]

*"Amnestrogen" is a trade name of E. R. Squibb & Sons

Literature available upon request
E. R. Squibb & Sons, 745 Fifth Avenue, New York 22, N. Y.

Four potencies for flexibility in dosage: 0.3 mg.—100's; 0.625 mg.—100's, 1000's; 1.25 mg.—100's, 1000's; 2.5 mg.—25's, 100's.

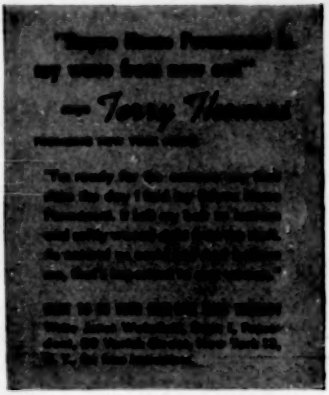
Amnestrogen

Squibb Conjugated Estrogens; Potency Expressed as Sodium Estrone Sulfate

SQUIBB

Lovely lady... Lovely hair

She's a "Rayving Beauty" now



Now much faster . . . yet the Dial-a-Wave makes it so sure!

Your waving time is *faster* than ever . . . and you're *sure* of getting exactly the amount of curl you want! Rayve's exclusive Dial-a-Wave quickly shows you the *fastest* waving time for *your* kind of hair . . . without guesswork!

A Rayve wave lasts longer . . . yet looks lovelier from the start!

It will shimmer with highlights . . . almost set itself! No frizzy ends, *ever* . . . for Rayve's improved waving lotion is so much *gentler*, safer. And because it's timed *individually* for you, your Rayve permanent stays lovely *weeks* longer!

COMPLETE RAYVE KIT $2

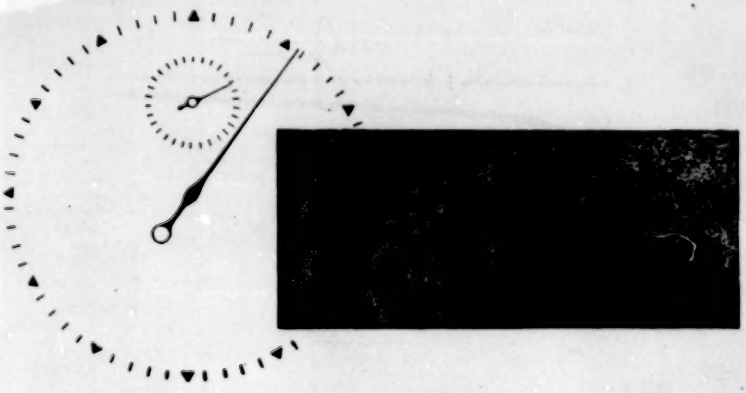
RAYVE REFILL $1

WHAT ABOUT CURLERS?

Use any plastic curlers you have . . . for Rayve's lovelier results come from the *gentler* solutions and *individual* Dial-a-Wave timing.

It's easy to be a "Rayving Beauty" with **Rayve Home Permanent**

ANOTHER FINE PRODUCT OF LEVER BROTHERS COMPANY



coagulation time

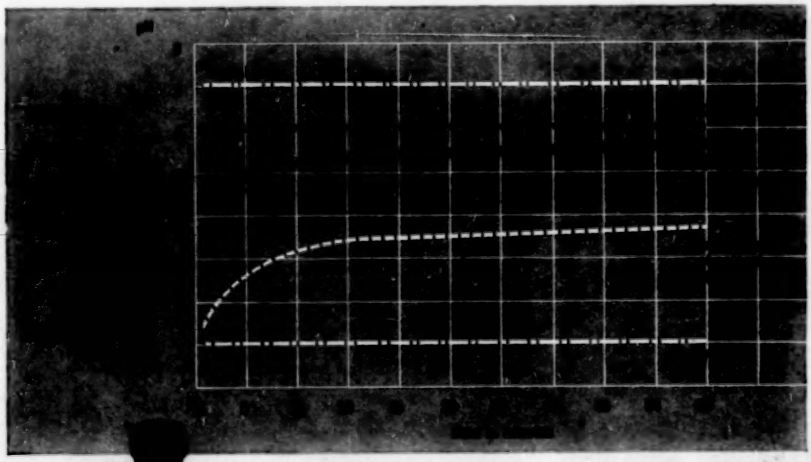
This simple clinical test enables the physician to determine the efficacy and dosage of anticoagulant therapy with Heparin Sodium preparations developed by Upjohn research workers. The prompt effectiveness and ready controllability of therapy with preparations such as long-acting Depo*-Heparin Sodium, with or without vasoconstrictors, account for their expanding use in the treatment of thromboembolic disease.

*Trademark, Reg. U. S. Pat. Off.

Upjohn *Medicine...Produced with care...Designed for health*

THE UPJOHN COMPANY, KALAMAZOO 99, MICHIGAN

NON-SURGICAL TREATMENT



OF PEPTIC ULCER

Glycine and Calcium Carbonate

Gastroenterologists have long endorsed the use of milk, when practicable, for its ideal acid-converting power and buffering capacity.[1, 2] In a recent comprehensive paper, Aaron[3] and others[4, 5, 6] express a preference for calcium carbonate as the antacid to be employed.

TITRALAC, by combining proper proportions of purified calcium carbonate and the amino acid glycine, *provides an acid-converting and buffering effect practically equivalent to that of fresh milk*, as shown in the above chart.* Just 1 TITRALAC tablet is equivalent to an 8-ounce glass of milk in antacid effect and provides quick and long-lasting relief from the distressing symptoms of hyperacidity.

The very agreeable taste of soft-massed TITRALAC tablets, which is achieved without employing taste-disguising, acid-generating sugars in the formula, makes them as acceptable to patients as an after-dinner mint. Prescribing TITRALAC eliminates the probability of unfavorable reactions often associated with the taking of metallic-tasting, astringent tablets or liquids, and ensures adherence to the prescribed dosage.

TITRALAC tablets are supplied in bottles of 100 and convenient-to-carry packages of 40.

REFERENCES

1. Rossett, N. E., and Flexner, J.: Ann. Int. Med. 18: 193 (1944). 2. Freezer, C. R. E.; Gibson, C. S., and Matthews, E.: Guy's Hosp. Reports 78: 191 (1928). 3. Aaron, A. H.; Lipp, W. F., and Milch, E.: J. A. M. A. 139: 514 (Feb. 19) 1949. 4. Kirsner, J. B., and Palmer, W. L.: Illinois M. J. 94: 357 (Dec.) 1948. 5. Kimball, S.: in Practice of Medicine (Tice). Hagerstown, Md., W. F. Prior Company, Inc., 1948; p. 210. 6. Special Article: M. Times 76: 10 (Jan.) 1948.

*The formula of TITRALAC is one whose composition and mode of action are recognized by U.S. Patent No. 2,429,508.

Samples and literature to physicians upon request.

SCHENLEY LABORATORIES, INC., 350 FIFTH AVENUE, NEW YORK 1, N. Y.

©Schenley Laboratories, Inc.

Faulty posture is a predisposing cause of chronic arthritis*

To reduce pain, deformity and invalidism — correct the posture*

In the literature on chronic arthritis, there is evidence* to indicate that:

- ***maintaining*** proper posture is a preventive measure;
- ***correcting*** faulty posture is an essential part of curative treatment;
- ***supporting*** the body with the proper support in many cases aids in controlling muscle spasm and pain, helps prevent deformity and helps keep the patient "on his job." The reason: *Proper* support relieves strain by providing immediate posture improvement, assists recovery of abdominal tone by supporting visceral organs in normal position to improve functioning. Thus, proper supports make possible *earlier* the correct use of the body.

Why Spencer is a support of choice

Each Spencer is ***individually designed, cut, and made*** for each patient according to the medical indications. Comfort, improved appearance assure patient cooperation.

In the photograph *at left*, note the typical faulty posture of this arthritic patient. *At right*, note the same patient in her Spencer Supports prescribed and individually designed for her to improve and maintain posture, to relieve strain and fatigue, to encourage muscle exercise.

Prescribe Spencer for men, women, children—for abdomen, back, breasts.

MAIL coupon below—or PHONE a dealer in Spencer Supports (see "Spencer corsetiere," "Spencer Support Shop," or Classified Section) for information.

*Goldthwait, et al. Essentials of Body Mechanics. J. B. Lippincott Co., Philadelphia, 1948, pp. 198-241. Swezey, Loring T., *The General Treatment of Arthritis*, J. Indiana M.A. 38: 488 (Dec.) 1945. Quory Jr., Richard T. Rheumatoid Spondylitis. J.A.M.A. 130: 697 (March 11) 1949. Lewin, Philip, Backache and Sciatic Neuritis, Lea and Febiger, Philadelphia, 1943, pp. 314, 344, 345.

individually designed SPENCER SUPPORTS®

SPENCER, INCORPORATED
157 Derby Ave., New Haven 7, Conn.
Canada: Spencer, Ltd., Back Island, Que.
England: Spencer, Ltd., Banbury, Oxon.

Send booklet, "Spencer Supports in Modern Medical Practice."

Name ..... M.D.

Address .....

.....

6-24-50

As certain

as the return of a mountain echo

is the predictable response to Liver Extract

Solutions, Lilly, administered to patients

with almost any type of macrocytic anemia.

The assured potency of these products

is determined clinically by investigators

responsible for their quality control.

PREDICTABLE RESPONSE

Regardless of the concentration or degree

of refinement demanded of a parenteral

liver extract, there is a Liver Extract Solution,

Lilly, to meet your needs.

AMPOULES SOLUTION LIVER EXTRACT, CRUDE, LILLY

1 and 2 injectable U.S.P. units per cc.

Available in five convenient package sizes

AMPOULES SOLUTION LIVER EXTRACT, PURIFIED, LILLY

5, 10, and 15 injectable U.S.P. units per cc.

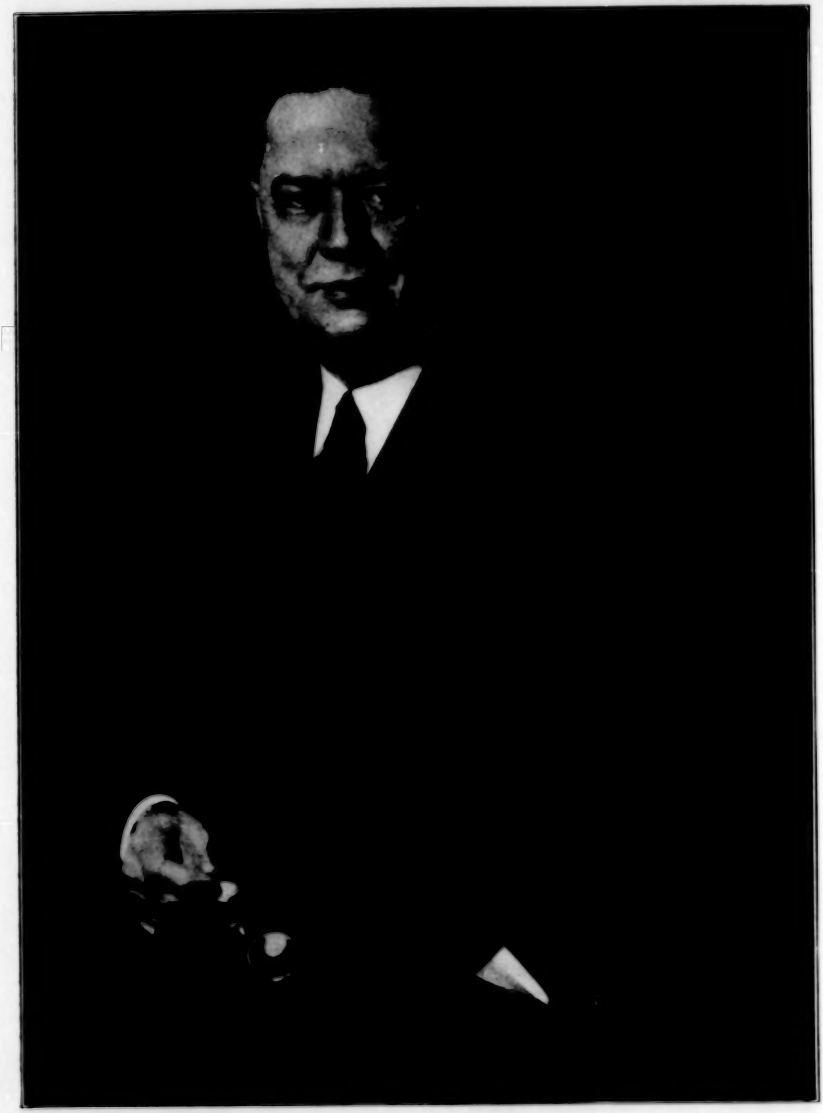
Available in seven convenient package sizes

Lilly

ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA, U. S. A.

Complete literature on Solutions Liver Extract, Lilly, is available from your Lilly medical service representative or will be forwarded upon request.

Spaces No. C-8 and C-10



E. R. Henderson

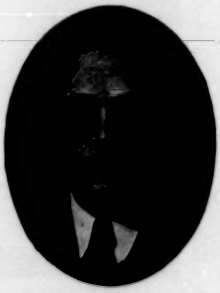
PRESIDENT, AMERICAN MEDICAL ASSOCIATION, 1950-1951

V
19

WALTER S. MARTIN
Norfolk, Va.

JAMES R. MILLER
Hartford, Conn.

EDWARD J. McCORMICK
Toledo, Ohio



EDWIN S. HAMILTON, Secretary
Kaukauna, Wis.

LOUIS H. BAUER, Chairman
Hempstead, N. Y.

GUNNAR GUNDERSEN
La Crosse, Wis.

JOHN H. FITZGIBBON
Portland, Ore.

DWIGHT H. MURRAY
Napa, Calif.

F. J. L. BLASINGAME
Wharton, Texas

BOARD OF TRUSTEES

F. P. BORZELL
Philadelphia
Speaker—House of Delegates

JOSEPH S. BARR
Boston
Chairman
Section on Orthopedic Surgery

ARTHUR L. BLOOMFIELD
San Francisco
Chairman
Section on Internal Medicine

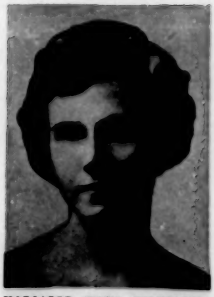
A. RAY IRVINE
Beverly Hills, Calif.
Chairman
Section on Ophthalmology

WILLIAM H. JOHNSTON
Santa Barbara, Calif.
Chairman
Section on Laryngology, Otology and Rhinology

F. W. KOHZELMANN
Atlantic City, N. J.
Chairman
Section on
Pathology and Physiology

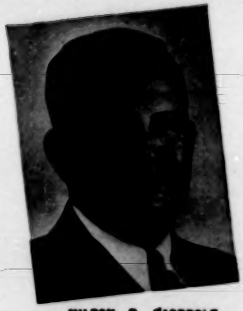
U. V. PORTMANN
Cleveland
Chairman
Section on Radiology

MICHAEL E. DeBAKEY
Houston, Texas
Chairman
Section on Surgery, General and Abdominal



MARGARET MARY NICHOLSON
Washington, D. C.
Chairman
Section on Pediatrics

FREDERICK P. MOERSCH
Rochester, Minn.
Chairman
Section on Nervous and Mental Diseases



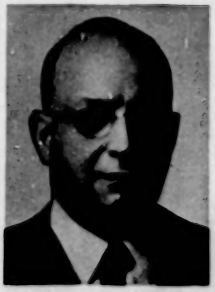
MILTON B. CASEBOLT
Kansas City, Mo.
Chairman
Section on General Practice

RUSSELL S. BOLES
Philadelphia
Chairman
Section on Gastro-Enterology and Proctology

CLINTON W. LANE
St. Louis
Chairman
Section on Dermatology and Syphilology

EDWARD H. COOK
Rochester, Minn.
Chairman
Section on Urology

CARL H. NEUPERT
Madison, Wis.
Chairman
Section on
Preventive and Industrial Medicine and Public Health



WALTER E. VEST
Huntington, W. W. Va.
Chairman
Section on Diseases of the Chest

McKEEN CATTELL
New York
Chairman
Section on Experimental Medicine and Therapeutics

FRANK H. KRUSEN
Rochester, Minn.
Chairman
Section on Physical Medicine and Rehabilitation

FREDERIC W. CLEMENT
Toledo, Ohio
Chairman
Section on Anesthesiology

JAMES R. BLOSS
Huntington, W. Va.
Chairman
Section on Obstetrics and Gynecology

HOWARD A. RUSK
New York
Secretary
Section on Physical Medicine and Rehabilitation

FRANCIS M. FORSTER
Philadelphia
Secretary
Section on Nervous and Mental Diseases

JEAN S. FELTON
Oak Ridge, Tenn.
Secretary
Section on Preventive and Industrial Medicine and Public Health

JOHN S. LUNDY
Rochester, Minn.
Secretary
Section on Anesthesiology

PAUL C. HODGES
Chicago
Secretary
Section on Radiology

THOMAS E. ROBINSON
Salt Lake City
Secretary
Section on General Practice

JAY A. MYERS
Minneapolis
Secretary
Section on Diseases of the Chest

CHARLES H. PEASE
Chicago
Secretary
Section on Orthopedic Surgery

DONOVAN C. BROWNE
New Orleans
Secretary
Section on Gastro-Enterology and Proctology

I. RIDGEWAY TRIMBLE
Baltimore
Secretary
Section on Surgery, General and Abdominal

V
19

EARL E. EWERT
Boston
Secretary
Section on Urology

WALTER L. PALMER
Chicago
Secretary
Section on Internal Medicine

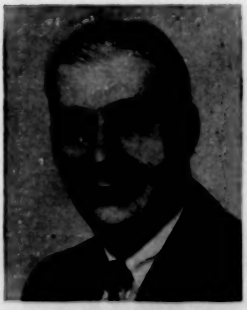
ARTHUR B. HUNT
Rochester, Minn.
Secretary
Section on Obstetrics and Gynecology

EDWIN F. HIRSCH
Chicago
Secretary
Section on Pathology and Physiology

CARL V. MOORE
St. Louis
Secretary
Section on Experimental Medicine and Therapeutics

TRYGVE GUNDERSEN
Boston
Secretary
Section on Ophthalmology

WYMAN C. C. COLE
Detroit
Secretary
Section on Pediatrics



JOHN H. LAMB
Oklahoma City
Secretary
Section on Dermatology and Syphilology

J. MILTON ROSS
Detroit
Secretary
Section on Laryngology, Otology and Rhinology

V
19

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 143, NO. 8 — CHICAGO, ILLINOIS — JUNE 24, 1950

COPYRIGHT, 1950, BY AMERICAN MEDICAL ASSOCIATION

MEDULLARY NAILING OF THE FEMUR

Comparative Study of Skeletal Traction, Dual Plating and Medullary Nailing

DANA M. STREET, M.D.
Memphis, Tenn.

The treatment of fractures in the femoral shaft has undergone a process of evolution in which five main mechanical principles have been developed. The older methods are safer from the standpoint of infection and do not require elaborate operative facilities. However, they require greater manipulative skill to achieve an equally good anatomic result, and in some types of fractures such a result is a physical impossibility by closed methods.

The oldest method, that of reduction by manual traction and manipulation followed by external fixation, was extensively employed by Hippocrates [1] and his group. It has been commonly used since, particularly after Mathijsen's contribution of plaster bandages in 1852. As Mr. H. Osmond Clarke [2] has said, it is still the safest method; yet its use in this country is chiefly limited to fractures of the femur in children because of the difficulty in maintaining satisfactory alinement. Joint stiffness following immobilization is also less of a problem in children.

The second method, that of continuous traction, was introduced by de Chauliac about 1350.[3] Its chief advantage was in eliminating the risk of displacement and overriding due to insufficient external fixation. It was widely used prior to the advent of plaster fixation, and with the refinements of skeletal traction it is still one of the most popular forms of treatment. Its advantages in cases of fracture with severe soft tissue damage have been demonstrated by Key and Conwell [4] and more recently by Winant [5] using delayed primary closure. Some mobilization of the knee and full range of motion of the ankle is possible. The disadvantages are the prolonged period of recumbency with almost constant supervision and frequent adjustment of the traction. The danger of distraction with resulting nonunion has been stressed by Böhler.[6] With proper technic, infections of the pin site and ring sequestrums should be rare. A method frequently employed is a combination of the first and second; namely, that of maintenance in traction until sufficient callus has formed to stabilize the fragments, then application of a cast. Although this allows a short hospitalization period, it has the disadvantage of prolonged immobilization of the knee and other joints.

Open reduction and wire suture fixation was attempted as early as 1827 by Rogers,[8] but it was not until the improvement in the results of surgery brought by the concepts of antisepsis and asepsis that such procedures gained acceptance. The plate employed by Lane [7] in 1905 has proved a more stable fixation for many fractures than the previously used wire sutures, transfixion screws and Parham band. Anatomic reduction can be maintained, though there may be extensive comminution or even loss of a fragment. However, there continues an active controversy whether this advantage offsets the risk of infection and the possibility of delayed union. As McLaughlin [8] has stated, internal fixation in only one plane must be supplemented by external fixation.

External skeletal fixation was originally employed by Bonnet about 1870, and again by Parkhill [9] and also Lambotte [10] around the turn of the century. More recently the Haynes,[11] the Roger Anderson [12] and the Stader [13] apparatus have provided greater ease of adjustment. Theoretically external skeletal fixation should retain the advantage of closed reduction while securing the solidity of skeletal fixation and the easy adjustment of traction. Since it does not extend beyond the joints, there should be no restriction of motion. But in the femur, where the pins must pass through heavy muscles, there is considerable irritation and exudation. Even such a staunch advocate of external skeletal fixation as John R. Naden [14] prefers medullary nailing for the femoral shaft.

The fifth method, medullary nailing, is a form of internal fixation in which the internal splint is suffi-

From the Orthopedic Section, Veterans Administration Medical Teaching Group, Kennedy Hospital.

Read before the Section on Orthopedic Surgery at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J., June 9, 1949.

Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the author are a result of his own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

1. Hippocrates: The Genuine Works of Hippocrates, translated by F. Adams, Baltimore, Williams & Wilkins Company, 1939.
2. Clarke, H. O., in discussion on McLaughlin, Gaston, Neer and Craig.[8]
3. Cited by Bick, E. M.: Source Book of Orthopaedics, ed. 2, Baltimore, Williams & Wilkins Company, 1948.
4. Key, J. A., and Conwell, H. E.: The Management of Fractures, Dislocations, and Sprains, ed. 3, St. Louis, C. V. Mosby Company, 1942.
5. Winant, E. M.: The Use of Skeletal Traction in the Treatment of Fractures of the Femur, J. Bone & Joint Surg. 31-A:87-93, 1949.
6. Böhler, L.: Medullary Nailing of Küntscher, translated by Hans Tretter, Baltimore, Williams & Wilkins Company, 1948.
7. Lane, W. A.: Operative Treatment of Fractures, London, 1905.
8. McLaughlin, H. L.; Gaston, S. R.; Neer, C. S., and Craig, F. S.: Open Reduction and Internal Fixation of Fractures of the Long Bones, J. Bone & Joint Surg. 31-A:94-99, 1949.
9. Parkhill, C.: Further Observations Regarding the Use of the Bone Clamp in Ununited Fractures, Fractures with Malunion, and Recent Fractures with a Tendency to Displacement, Ann. Surg. 27:533, 1898.
10. Lambotte, A.: Chirurgie opératoire des fractures, Paris, Masson et Cie, 1913.
11. Haynes, H. H.: Treating Fractures by Skeletal Fixation of Individual Bone, South. M. J. 22:720-724, 1929.
12. Anderson, R.: End-to-End Reduction in Fractures of Lower Extremity, West. J. Surg. 41:671-679, 1933.
13. Stader, O.: Preliminary Announcement of a New Method of Treating Fractures, North Am. Vet. 18:37, 1937.
14. Naden, J. R.: Personal communication to the author, May 1949.

ciently strong to obviate the need for supplementary fixation. It is analogous to nailing in the femoral neck. The nail, by spanning the medullary canal and extending nearly its entire length, effectively controls displacement, angulation and rotation. Since the joints are not restricted by traction or immobilization and

Fig. 1.—Bilateral femur fracture; comminuted right treated by dual plating: *A*, preoperatively; *B*, good callus at eight weeks, density equal to left (fig. 2*B*), and *C*, result at fifteen months.

the muscles are not transfixed by pins, joint motion and muscle power are readily maintained. The physiologic pressure exerted by muscle tone and early weight bearing tend to close the fracture line and promote early union.

Medullary nailing is the diametric opposite of the first method, closed reduction with external fixation, in

Fig. 2.—Bilateral femur fracture; transverse left treated by skeletal traction: *A*, on admission; *B*, good callus at eight weeks, and *C*, result at fifteen months.

which manipulative skill is necessary, special instruments are not needed, risk of infection is nil, the joints are immobilized and duration of disability is great. If medullary nailing is done by open reduction a minimum of manipulative skill is necessary, special instruments are essential, potentialities of infection are great, the joints are freely movable and duration of disabilty is the shortest.

This method has not emerged in its present form but has been a gradual development. During the first decade of this century Lambotte [10] successfully used axial pinning in many of the smaller bones. He also treated subtrochanteric fractures of the femur by means of a long screw inserted through the greater trochanter. During the second decade medullary bone grafts were used with discouraging results except in the small bones such as the metatarsals. In 1918 Hey Groves [15] reported 3 cases of gunshot fractures in the upper third of the femur in which he used medullary nails. This work seems to have been overlooked by subsequent authors. His nails spanned the canal but were rather short, extending only 3 inches (7.62 cm.) below the fracture site. He tried three patterns of nail—a solid rod, one of cross-shaped section and a perforated tube. His problem was chiefly that of infection, and he preferred the solid rod because there were no

Fig. 3.—Fastest callus formation of all occurred in traction case: *A*, dense callus at seven weeks; *B*, result at twenty-three months, ½ inch (1.27 cm.) short, anterior bow.

pockets or grooves to harbor infection. During the fourth decade axial Kirschner wires were used chiefly in the forearm by Joly [16] and also by Danis [16] of Belgium and Lambrinudi [17] in England. The use of Steinmann pins for the ulna and femur was reported by Leslie V. Rush and his brother in this country in 1937 [18] and 1939.[19] He has since expanded his method to include fractures in many locations.

In 1940 Küntscher [20] of Kiel, Germany, published his work on medullary nailing, and such nailing has

15. Groves, E. W. H.: Ununited Fractures with Special Reference to Gunshot Injuries and the Use of Bone Grafting, Brit. J. Surg. **6**: 203-247, 1918.

16. Cited by Sœur, R.: Intramedullary Pinning of Diaphyseal Fractures, J. Bone & Joint Surg. **28**: 309-331, 1946.

17. Lambrinudi, C.: Intramedullary Kirschner Wires in the Treatment of Fractures, Proc. Roy. Soc. Med. **33**: 153-157, 1940.

18. Rush, L. V., and Rush, H. L.: Reconstruction Operation for Comminuted Fracture of the Upper Third of Ulna, Am. J. Surg. **38**: 332-333, 1937.

19. Rush, L. V., and Rush, H. L.: Technique for Longitudinal Pin Fixation of Certain Fractures of Ulna and of Femur, J. Bone & Joint Surg. **21**: 619-626, 1939.

20. Küntscher, G.: Die Marknagelung von Knochenbrüchen, Arch. f. klin. Chir. **200**: 443-455, 1940.

since been known as the Küntscher method. It was rapidly adopted for treatment of German war casualties and the advantage of short disability was immediately apparent. His primary contribution was the use of a nail of sufficient size to render supplementary fixation unnecessary. He expanded the method to include not only fractures but osteotomies for malunion and femur shortening and arthrodesis.[21]

We agree with R. I. Harris [22] that the method should be determined by the circumstances in which the treatment is to be given, the experience of the operator and the type of fracture. However, the situation at Kennedy Veterans Administration Hospital has been somewhat unusual in that there have been many similar fractures of the shaft in vigorous young men. Since there were excellent operative facilities and my associates and I had had some experience with all these methods, it seemed there should be some advantages inherent in one of the methods which would render it

Fig. 4.—Slowest union also in traction case: *A*, scant callus at seven weeks; *B*, result at twenty-five months, ¾ inch (1.9 cm.) short, anterolateral bowing.

superior to the others in treating this type of patient. We therefore conducted a study series employing skeletal traction, dual plating and medullary nailing as the three most promising methods.

Skeletal traction was applied by means of a Kirschner wire passed through the tibial tubercle because it was believed that there is risk of damage to the quadriceps mechanism when the wire is located in the supracondylar region. The limb was also suspended in a Thomas splint with Pierson attachment. The traction was increased rapidly during the first four days until overriding was corrected. After one week, if satisfactory reduction had not been obtained, the fracture was manipulated while the patient was anesthetized, after which the traction weight was reduced to about 10 pounds (4.5 Kg.).

21. Küntscher, G., and Maatz, R.: Technik der Marknagelung, Leipzig, Thieme, 1945.
22. Harris, R. I., in discussion on McLaughlin, Gaston, Neer and Craig.[3]

Dual plating was carried out through an anterolateral or lateral approach, and two six-hole plates were applied, one to the anterior and the other to the lateral aspect. Postoperatively, the extremity was suspended in a balanced Thomas splint with Pierson attachment

Fig. 5.—Rapid union with dual plating: *A*, union plus myositis ossificans at eight weeks; *B*, result at twenty-two months, no shortening or bowing. Myositis ossificans still present.

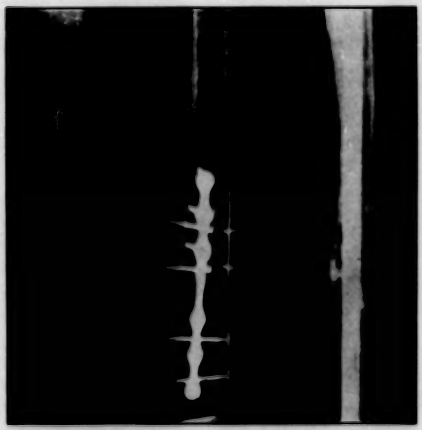


Fig. 6.—Only nonunion of series occurred with dual plating: *A*, no callus at fourteen weeks; *B*, screws broken, plates loose at twelve months, and *C*, after nailing, dense callus, clinical union at thirteen weeks.

until there was roentgenologic evidence of callus consolidation. Traction was not applied, and the patients were encouraged to exercise the knee, hip and ankle.

The first 2 cases of medullary nailing were done by the open method, exposing the fracture site and insert-

ing the nail retrograde. When the earlier form of nail with an eye was used it was necessary to make the small incision proximal to the trochanter first and by inserting a narrow osteotome into the medial side of the trochanter to soften the cortex for the passage of the nail. However, this is not necessary when the newer

Fig. 7.—High fracture best treated by nailing: *A*, preoperatively; *B*, closed nailing at seven weeks, and *C*, result following removal of nail at eight months.

form of nail with the threaded, pointed stud is used. This can be passed retrograde up through the trochanter without danger of comminution, and the proximal incision can be made when the point is felt subcutaneously. The driver-extractor is next screwed onto the stud, and the nail extracted until the distal end is at the fracture site. The fracture is then reduced and the nail driven into the distal fragment.

The next 3 patients were treated by closed nailing. In these, the nail was inserted from above and driven down to the fracture site. The fracture was reduced by traction and manipulation under fluoroscopic control, and the nail was then driven into the distal fragment. The postoperative program was the same for both open and closed nailing and consisted of three weeks in bed with the limb suspended as in the other cases. Ambulation on crutches was then begun, gradually increasing the weight placed on the injured extremity until it was fully weight bearing at the end of another three weeks. However, in many cases there were injuries in other parts of the body which necessitated an increase in these time intervals.

A total of 17 fractures were treated in rotation, after which the nailing procedure appeared to have such great advantages that the other two methods were abandoned except in unusual circumstances. We have now treated a total of 60 fractures of the femoral shaft by nailing without a single poor result and therefore have had no reason to regret this decision. Of the 5 traction cases we were unable to obtain satisfactory reduction in the first, so this one was plated. Therefore, 4 patients were treated by traction and 6 by plating. To the 7 cases of nailing, 3 were added to provide a comparison between 5 open and 5 closed. Data on a few cases are reported to illustrate typical observations and less usual problems.

REPORT OF CASES

Case 1.—In a bilateral femur fracture, the comminuted right femur was plated (fig. 1) and the transverse fracture in the left was treated by traction (fig. 2). Callus was apparent by roentgen examination on both sides at eighteen days; at eight weeks good callus was seen bilaterally. In the original roentgenograms it is of equal density though more extensive on the comminuted side. At sixteen weeks the callus had increased in density, clinical union was present and tenderness had disappeared. The patient was about to get out of bed when homologous serum jaundice developed, delaying his ambulation eight weeks. His result on the right at fifteen months was without displacement, angulation or shortening. At the same time, the left showed a slight displacement, no appreciable angulation and ¼ inch (0.64 cm.) shortening. Motion of the right knee measured 178 to 32 degrees, and the left 180 to 30 degrees. This case illustrates the equal time for callus to appear and equal rate of callus consolidation in these two methods.

Case 2.—The fastest rate of callus formation was seen in another fracture treated by traction (fig. 3). The callus was becoming dense at seven weeks, and the paient was bearing weight on the limb at fourteen weeks. His final roentgenogram at twenty-three months showed moderate displacement with interlocking of fragments resulting in ½ inch (1.27 cm.) shortening and some anterior bowing. Knee motion was 180 to 35 degrees. No atrophy of the thigh or calf was present, and he could walk and run without abnormal fatigue.

Case 3.—A contrast is seen in another patient treated by traction in whom union was the slowest of all (fig. 4). The callus was scant at seven weeks. Because false motion was still present at twelve weeks he was placed in a hip spica for eight weeks, after which he wore an ischial weight-bearing brace for three months. Callus did not appear solid until five

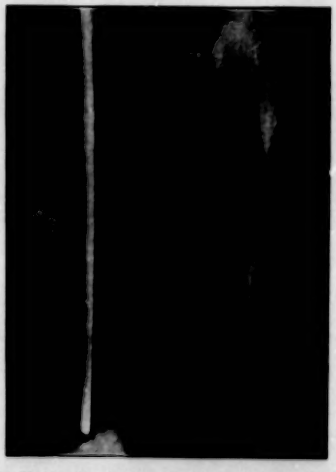


Fig. 8.—Ideal location of fracture at isthmus: *A*, closed nailing at nine weeks; *B*, result at twenty months, no shortening or bowing.

months. His result at twenty-five months was satisfactory with moderate displacement, anterior and lateral bowing and ¾ inch (1.9 cm.) atrophy of the thigh. He had no symptoms while walking or running but a slight limp due to shortening.

Case 4.—A fracture treated by dual plating (fig. 5) united promptly in eight weeks. There was 2 plus contusion of the adductor muscles, and at eight weeks considerable myositis

V 19

ossificans had developed. This was still present in the final roentgenogram at twenty-two months. There was no displacement, angulation or shortening; however, there was 1¼ inches (4.5 cm.) atrophy of the thigh. Knee motion was 180 to 60 degrees, or 30 degrees limitation in flexion. The man works as a waiter without symptoms.

CASE 5.—In contrast to the rapid healing with dual plating in case 4 is the one nonunion of the entire series (fig. 6). A trace of callus appeared at four weeks but did not continue to develop, and at fourteen weeks there was no apparent callus. This deficiency of callus was attributed to the gap between the fragments rigidly maintained by the plates. Ambulation was begun at six months in an attempt to stimulate callus, but at twelve months the nonunion was apparent, with broken screws and loose plates. Perhaps this might have been averted by the use of slotted plates. However, the result following insertion of a medullary nail was excellent. Callus formation, absent before, was now prompt and adequate. By thirteen weeks tenderness was gone, and the man was not only ambulatory but working, without symptoms, in a garden. Küntscher and others have spoken of the psychic trauma incident to a long period of recumbency. Schizophrenia developed after this patient was off his feet for six months, which might not have occurred had the second method been used first.

CASE 6.—A high fracture such as that illustrated in figure 7 is difficult to hold by other methods but ideal for medullary nailing. The nail was inserted when the fracture was openly reduced, and the patient was ambulatory while union was in progress. The nail was removed after eight months.

Anatomic Results

	Callus Appearance (Days)	Consolidation (Days)	Shortening (In.)	Angulation	Atrophy (In.)
Traction	20	140	7/16	10°	1¼
Plating	28	142	0	0	1¼
Open nailing	26	137	0	0	¾
Closed nailing	24	144	0	1	¾

CASE 7.—Another fracture treated by the closed method is shown in figure 8. The patient returned to work in a machine shop seven weeks after injury, with no disability. The nail was extracted at seven months.

RESULTS

The anatomic results in the 20 patients studied in this series are shown in the accompanying table. The figures represent averages for each of the four groups of cases.

Various opinions have been expressed with regard to the effect of open reduction on callus formation. Most consider it to be diminished. In regard to medullary nailing, it was at first thought by Küntscher and others to stimulate callus. Böhler,[8] in his recent book, expressed the opinion that nailing delays callus formation. In the cases reported herein the formation of callus was apparently neither stimulated nor delayed.

In the accompanying table callus appearance refers to the number of days following fracture when it is visible by roentgen ray. Daily roentgenograms were not taken, and in many instances the callus was already well defined in the first postreduction film. This error is less evident in the traction cases, in which more roentgenograms were taken. The differences shown in the first column are not considered significant, and it can be stated that appearance of callus is not grossly affected by any of the methods.

Consolidation of callus was difficult to determine accurately owing to differences in roentgenologic technic. The presence of 4 plus callus, that is, callus of maximum density, was taken as the end point. Here again it would seem that the development of callus is not grossly affected by any of the methods.

Shortening ranged from 5/16 to ¾ inch (0.8 to 1.91 cm.) and was found only in the traction group. Angulation in this group showed a maximum of 20 degrees. One patient treated by closed nailing bent his nail 5 degrees, but the shortening was negligible. The figures for atrophy show averages at three months as measured 5 inches (12.7 cm.) above the patella. Most of the patients had completely recovered from the atrophy by the end of two years.

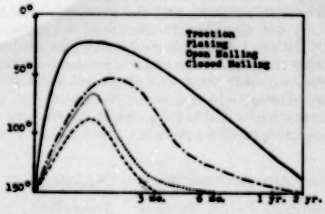


Fig. 9.—Results of various methods of fracture repair in function of knee joint.

The results in function of the knee joint are shown in figure 9. Owing to the wide individual variation, the shapes of these curves are not statistically accurate. However, it can be said that limitation of knee motion develops more rapidly and persists longer with traction than with the other two methods. All knees returned to approximately normal range of motion in two years except in 1 case of dual plating with 30 degrees limitation persisting. The difference between the two medullary nailing groups is accounted for by severe associated injuries in those with fractures nailed by the open method.

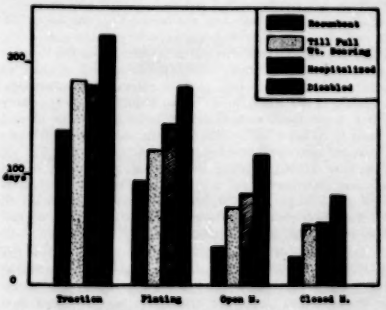


Fig. 10.—Results of fracture repair methods in terms of disability.

Results in terms of disability are found in figure 10. The periods of hospitalization are longer in a veterans hospital than they would be in the average civilian hospital. The time until full weight bearing is resumed closely parallels the period of recumbency and total disability. In 1942 Dr. Van Gorder [23] reported 58 cases of fracture in the femoral shaft treated by skeletal

23. Van Gorder, G. W.: Fractures of Femur, New England J. Med. 226: 526-530, 1942.

traction. The total disability in his series averaged seven and one-fourth months, or about two hundred and twenty days, which is almost the identical figure here obtained and tends to support the validity of this series.

CONCLUSION

Although the series studied is small, evidence is presented which indicates that the processes of fracture healing are not significantly disturbed by methods of internal fixation. Anatomic and functional results are better with these methods than with skeletal traction. Hospitalization and total disability are shortest with medullary nailing, which is recommended as the treatment of choice in suitable fractures of the femoral shaft where operative facilities permit.

ABSTRACT OF DISCUSSION

DR. GEORGE O. EATON, Baltimore: Intramedullary nailing, although far from new, is exciting increasing interest in this country. If it measures up to the exacting standards of American medicine, it should be incorporated in the physician's armamentarium. Are the risks attendant to its use more than compensated for by the advantages? Can the risks be eliminated or diminished? In bones other than the femur, shock during the operation of intramedullary nailing is seldom a serious factor. Operations on the femur, if extensive or prolonged, produce shock of varying degree. Intramedullary nailing is no exception. In children and young adults joint stiffness following the usual period of traction or immobilization is usually mild and of short duration. The older the patient and the more prolonged the anticipated convalescence, the more is the physician justified in submitting the patient to intramedullary nailing. The fracture must be within the middle two quarters of the shaft. One must estimate accurately the length and diameter of the medullary cavity by means of preoperative roentgen studies. Apparently there is no such thing as a normal or average size medullary cavity. Its size cannot be formulated on the basis of age, sex, height, weight or other known factors. In Böhler's book entitled "Medullary Nailing of Küntscher" there is a section on "how to proceed if a medullarly nail can be neither driven in further nor removed." Too short or narrow a nail does not immobilize; the use of too wide a nail may come close to being an unforgettable experience. Technical difficulties abound in this procedure. For the surgeon who is called on to manage the occasional case of fracture of the shaft of the femur, this method offers little advantage. Bone healing is not more rapid. Open reductions always carry more risk than closed reductions. A large assortment of nail sizes must be at hand for one case. Painstaking roentgen study must precede operative intervention. Fracture of the nail or infection may greatly prolong the healing time. The design of nails and instruments for their introduction and removal is undergoing thorough study at present, and there is reason to believe that through this study the most efficient type of nail and instruments will be developed.

DR. LESLIE V. RUSH, Meridian, Miss.: Dr. Street has approached the subject of medullary nailing from the point of view of the true scientist. My approach was from the standpoint of mechanics. Like Dr. Street, I am convinced that intramedullary fixation has definite possibilities and approaches the fracture problem more physiologically than any other method advocated so far. I have not had any experience with the ingenious nail of Dr. Street, but I have had the pleasure of seeing Dr. Street use this nail, and it was a convincing demonstration. My experience has been with a smaller nail or pin of smaller diameter than the medullary cavity, and I would like to dwell a little on the mechanics of the principle. My experiments have been directed toward trying to develop a simple method that was applicable to all of the long bones. My experience in the femur is not nearly so extensive as that of Dr. Street. I have used this type of fixation in a little more than 100 cases with practically all of the long bones, including about 22 cases of fracture of the femur.

DR. J. WARREN WHITE, Greenville, S. C.: Inspired by the Küntscher nail, the group with which I am associated in Greenville has worked out a combination of internal fixation, that is, the use of a plate and the Küntscher idea, which was reported at the meeting of the Southern Surgical Association in November 1948. As far as we know it is a new technic. Any surgeon who has inserted a Küntscher nail and has not been able to pull it out—either because the hook has straightened out or something else has happened—has found himself in an embarrassing situation. Innumerable complications can develop, and use of the Küntscher nail is fraught with many hazards. The technic which we have worked out has been tried only in 10 patients. It is of use in all the long bones, but it is particularly valuable in both bones of the forearm. We all agree that the use of plates as a routine measure is not desirable. It tends to distract the bone ends. We have wanted to do something that allows the maintenance of end to end apposition, so that bone ends are in contact. The idea of the Küntscher nail, that is, internal fixation with end to end apposition, is physiologically correct. It does allow, with the muscle spasm, the close, desirable contact of the two fragments without complete immobilization. In order to get contact and to allow the small amount of desirable osteogenic motion at the site of the fracture, we screw a conventional plate on one fragment only. Most of us still have these conventional plates in our surgical kit all the time. It is unnecessary to invest a large amount of money to get the different types of Küntscher nail. The plate is fastened with the screws to the proximal portion, and the distal portion is slipped or rarely driven into the medullary cavity on the other side. To be sure, that does not make a perfect anatomic reduction, but it does maintain physiologic end to end contact, and it allows also that small amount of motion at the site of the fracture which a good many of us consider desirable as an osteogenic stimulus.

DR. DANA M. STREET, Memphis, Tenn.: The use of a plate such as Dr. White described would seem to forego one of the main values of the medullary nailing method, that is, a sufficiently long hold on the fragments to make it possible to dispense with external fixation and allow early ambulation of the patient. The risk of fat embolism has been much discussed in the literature. Subclinical emboli are apparently frequent with or without nailing. Böhler has stated that the few fatal fat emboli have occurred in patients subjected to nailing while in severe shock. He emphasizes that nailing is a purely elective procedure. My associates and I customarily keep a patient in skeletal traction for seven to nine days before nailing. Many of our patients travel a long distance and arrive in a state of severe shock, or several days after injury. Such a waiting period allows time for supportive treatment and for the subsidence of swelling. We have been severely criticized for this delay, but the following instance illustrates its value. A vigorous young truck driver sustained bilateral comminuted fractures of the femur. Skeletal traction was applied, and twenty-four hours after injury he had a left hemiplegia and lapsed into coma. Unfortunately, his eye grounds were poorly visualized. In spite of no loss of consciousness at the time of the accident, a hematoma was suspected. Burr holes and a right parietal flap revealed no hematoma. He had become rational by the end of three weeks, when the femurs were nailed. Had the fractures been nailed just prior to this episode, which was thought to be fat embolism, the increment of fat might have proved fatal. Dr. Rush depends on the spring of the nail for fixation. We depend on the rigidity of the nail and its spanning of the medullary canal to control displacement. The first nails had an eye patterned after the nails of Küntscher. To insert the nail retrograde through the fracture site, it was necessary first to make a hole in the trochanter with a small osteotome. The more recent diamond-shaped nails with a pointed stud can be driven directly up through the medullary canal and through the trochanter without comminution. A minimum of equipment is necessary, namely, one suitable nail and one driver-extractor.

STREPTOMYCIN IN THE TREATMENT OF INFLUENZAL MENINGITIS

A Study of Ninety Cases, with 96.6 per Cent Recovery

EMANUEL APPELBAUM, M.D.
and
JACK NELSON, M.D.
New York

Prior to the advent of chemotherapy, the mortality of influenzal meningitis varied from 90 to 100 per cent. The status of the disease has been altered considerably by the use of sulfonamides and type B anti-influenzal rabbit serum. The introduction of streptomycin marked another advance. This paper is based on the use of streptomycin in a series of 90 cases of influenzal meningitis.

The 90 cases in this series were consecutive and were seen between Feb. 2, 1946, and July 1, 1949.

CLINICAL ASPECTS

Most of the patients presented the typical picture of meningitis. Individual patients showed considerable variation in the severity of the disease, but most of them appeared critically ill. As is well known, this form of meningitis is essentially a disease of infants and young children. Table 1 shows the age distribution in this group of cases.

The duration of illness before treatment with streptomycin varied from one day to five weeks. As shown in table 4, 63 of the 90 patients were treated within the first eight days of illness. In 16 instances the treatment was delayed for two weeks or longer.

DIAGNOSIS AND TREATMENT

Diagnostic lumbar punctures were performed on all the patients on their admission to the hospital. The diagnosis was confirmed bacteriologically in all cases. In 77 instances the organisms were found both on smear and on culture of the spinal fluid. Seven patients had a positive spinal fluid culture and a negative smear. A positive smear with capsular swelling but negative culture was found in 5 instances. In 1 case the identity of the organism was established by the blood culture. All the organisms but two were identified serologically as type B Hemophilus influenzae. The exceptions were a type F strain and an unclassified influenza bacillus identified by cultural characteristics. Streptomycin sensitivity tests were made on fifty strains. These are shown in table 2. The susceptibility to streptomycin of most of the tested organisms is apparent.

Blood cultures were made in 26 cases prior to the institution of streptomycin therapy. These were positive in 18 instances.

All the patients in this series were treated with streptomycin. In 73 cases the antibiotic was given both intramuscularly and intraspinally and in 17 intramuscularly only. In addition, sulfadiazine was used in all but 1 of the cases, the specific rabbit serum was administered to 17 patients and aureomycin to 1 patient. Many of the patients had also received penicillin before the diagnosis was established, and a few received it later when a secondary infection developed. There were considerable variations in the number of intraspinal treatments and in the duration of intramuscular therapy. The schedule of streptomycin treatment used in the majority of the cases is shown in table 3.

In a recent paper Hoyne and Brown[1] reported a group of 11 cases of influenzal meningitis treated with intramuscular but not intrathecal injections of streptomycin. All these 11 patients recovered, but in 2 of them there were sequelae in the form of deafness in one and facial palsy in the other. In our series 17 patients were treated without intrathecal injection of streptomycin. These patients were similar in all essential respects to the others in the series. The average intramuscular dose of streptomycin in these instances was 1 Gm. a day, and the duration of treatment averaged seven days. All these 17 patients made a complete recovery without any sequelae.

RESULTS

In this series of 90 cases there were 87 recoveries and 3 deaths, a recovery rate of 96.6 per cent. In the vast majority of the cases there was a marked improvement within six days after the institution of streptomycin therapy. Analysis of the data indicates that the duration of the illness previous to therapy did not seem to influence the final outcome. The fatalities were in infants aged 11, 12 and 17 months. Streptomycin sensitivity tests made in 2 of the fatal cases both gave values of 1.56 micrograms per cubic centimeter, which is indicative of pronounced susceptibility. In 1 of the patients, who had also pneumonia and pulmonary edema, death occurred within forty-eight hours of the time that therapy was instituted. In another of the fatal cases the presence of sulfonamide intoxication was suspected though not proved. The third patient, a 1 year old female infant with congenital heart disease, was treated with a combination of streptomycin, sulfadiazine and the specific serum. At first the child

TABLE 1.—*Age Distribution in 76 Cases of Meningitis Due to Hemophilus Influenzae*

Age, Yr.	No. of Cases
Under 1	28
1 to 3	45
4 to 10	13
15	1
29	1
46	1
51	1
Total	90

TABLE 2.—*Streptomycin Sensitivity Tests on Hemophilus Influenzae Cultures Isolated from Spinal Fluid*

Micrograms of Streptomycin per Cubic Centimeter Required to Sterilize a 1:250 Dilution of a 5 Hour Culture	No. of Strains
Less than 0.001	0
0.001 to 0.78	12
1.0 to 3.75	24
4.0 to 6.25	3
12.5	1
Over 12.5	0
Total	50

TABLE 3.—*Streptomycin Schedule in Hemophilus Influenzae Meningitis*

	Intrathecal		Intramuscular	
Age, Yr.	Mg. per Injection	No. of Treatments	Gm. per Day	Days of Treatment
Up to 4	50	2-6	0.25-0.5	5-9
Older children and adults	100	3-6	0.5 -1	5-9

From the Bureau of Laboratories, New York City Health Department.
Read before the Seventy-Seventh Annual Meeting of the American Public Health Association, New York, Oct. 28, 1949.

1. Hoyne, A. L., and Brown, R. H.: Intrathecal Therapy Not Required for H. Influenzae Meningitis; Report of Twenty-Eight Cases, J. A. M. A. 136: 597-601 (Feb. 26) 1948.

showed improvement, but after a long course, during most of which she was afebrile, she ultimately succumbed. It is possible that the associated conditions, present in the 3 fatal cases, were factors contributory to death.

Spinal Fluid Changes During the Course of Treatment.—With the institution of streptomycin therapy, fairly prompt disappearance of the organisms was noted in a vast majority of the cases. In 69 instances the spinal fluid became sterile within four days. The return of the spinal fluid sugar level to normal was less prompt, although in 50 cases this change occurred within seven days. In a few instances the infection appeared to be well under control before the level returned to normal. It may also be of interest to note that in 13 cases the level was normal when the streptomycin treatment was started.

Determinations of the concentration of streptomycin in the spinal fluid were made in 59 cases and in the blood in 21 instances. The blood levels varied from 1 to 800 and the spinal fluid levels from 2 to 150 micrograms per cubic centimeter. These concentrations could not be correlated with the clinical results.

Complications.—In 5 of the patients the disease was complicated by otitis media with or without mastoiditis. A mastoidectomy was performed in 2 of these patients. Pneumonia was encountered five times. In 5 of the patients serum reactions developed, four of which were immediate. One of the cases was complicated by hepatitis, another by iridocyclitis and a third by a gluteal abscess.

TABLE 4.—*Duration of Illness Before Streptomycin Therapy*

Days before therapy	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	22	27	30	50	90	1 yr.	Unknown
Number of cases	2	13	11	11	9	5	6	6	1	5	1	1	2	2	3	4	2	1	1	1	1	1	1

Toxic Reactions.—A skin rash appeared in 3 cases, in 2 of which there was also fever. In several cases there were episodes of fever, usually low grade, that could not be definitely explained. Some of these may have been due to drug toxicity. In 2 other cases the fever was probably a streptomycin reaction, since a sharp fall in the temperature followed the withdrawal of the antibiotic. A typical picture of encephalopathy, with coma, impairment of hearing and vision and paresis of a hand, occurred in 1 instance. The symptoms in this case cleared up when the use of streptomycin and sulfadiazine was discontinued. In 1 patient temporary paresis of the right arm developed, which may have been due to intrathecal administration of streptomycin. There was 1 instance of ataxia, due, probably, to vestibular disturbance.

Sequelae.—Nine of the patients in this series showed sequelae, most of which were of a serious nature. Deafness, partial or complete, was found in 4 patients, 1 of whom had also hydrocephalus and defective vision. There were 3 additional cases with impairment of vision and another instance of hydrocephalus. In 2 of the cases with blindness there was also mental impairment. A slight hemiparesis, affecting the left side, was the residual in a patient who had not received streptomycin intraspinally.

COMMENT

It is clear from this study that streptomycin is an effective agent in the treatment of meningitis due to Hemophilus influenzae. The best method of using this valuable drug, however, still remains to be determined. The fact that its administration by the combined intramuscular and intraspinal routes resulted in the recovery of 70 out of 73 patients is ample evidence that this method is highly effective. On the other hand, the results were exceedingly impressive when the streptomycin was given intramuscularly but not intraspinally to a group of 17 patients, all of whom recovered without sequelae. Obviously, the treatment of the disease with intramuscular but without intrathecal administration of streptomycin merits further trial.

With regard to adjuvant therapy, it was difficult in our study to evaluate properly the contributory role of the sulfadiazine, which was used in all but 1 of the cases. However, since sulfadiazine alone is frequently effective against the influenza bacillus and since there is some evidence that the addition of this compound aids in preventing the development of streptomycin fastness, it would seem at present advisable to use the combined therapy.

As mentioned previously, specific anti-influenzal serum was used in only 17 instances, 12 of which were among the earlier cases in the series. In 2 patients the meningeal infection appeared to be under control at the time the serum was administered. In 5 cases the total amount of serum given was 50 mg. or less, which may be regarded as inadequate. In the remaining 10 cases the pattern of response did not appear to be altered by the addition of the serum. It is our opinion, therefore, that serum is not necessary when the patient receives adequate streptomycin therapy in conjunction with sulfadiazine. In this connection it may be noted that the recent introduction of aureomycin has added another agent whose usefulness in the treatment of influenzal meningitis merits investigation.

It is particularly noteworthy that in this series there were relatively few toxic reactions. Since all but 1 of the patients had received combinations of therapeutic agents, the difficulty in attributing a particular reaction to the precise drug is apparent.

The occurrence of sequelae constitutes a serious problem. It is necessary to emphasize that neurologic sequelae can be, and usually are, the direct result of the meningeal infection. To what extent, if any, the therapy contributes toward the development of such residua is a matter of speculation. Although involvement of the eighth nerve has been known to follow the use of streptomycin, it is nevertheless important to bear in mind that impairment of hearing can be a sequel of any form of meningitis, regardless of the type of treatment. The absence of residua in the small group of 17 patients treated with intramuscular but without intraspinal administration of streptomycin may well be a factor of major importance. It may also be of interest to note that there was no increase in the frequency of sequelae among patients in whom treatment was delayed. The various aspects pertaining to neurologic residua require further study.

SUMMARY

In 90 consecutive cases of meningitis due to Hemophilus influenzae streptomycin was given intramuscularly and intrathecally to 73 patients and intra-

muscularly only to 17 patients. In addition, sulfadiazine was used in all but 1 of the cases and the specific rabbit serum was administered to 17 patients and aureomycin to 1 patient. Of the 90 patients, 87 recovered and 3 died, a recovery rate of 96.6 per cent. The 17 patients treated with intramuscular but without intraspinal injections of streptomycin recovered completely. With regard to the adjunctive therapy, it was difficult to evaluate the role of sulfadiazine. There was no evidence that rabbit serum played a contributory role. There were relatively few toxic reactions in the series, and neurologic residua occurred in a small number of the cases. Several important problems require further investigation, particularly those pertaining to the occurrence of sequelae and the method of choice in streptomycin therapy.

VENTRICULAR FIBRILLATION PRECIPITATED BY CARDIAC CATHETERIZATION

Complete Recovery of the Patient After Forty-Five Minutes

JAMES L. SOUTHWORTH, M.D.
VICTOR A. McKUSICK, M.D.
E. CONVERSE PEIRCE II, M.D.
and
FREEMAN L. RAWSON Jr., M.D.
Baltimore

We propose herein to report a case of ventricular fibrillation precipitated by cardiac catheterization, with complete recovery of the patient after forty-five minutes.

REPORT OF CASE

History.—E. F., a white woman aged 25, was admitted to the Cardiovascular Clinic Nov. 27, 1949 with complaints of dizzy spells and fainting of eight months' duration following pregnancy. Pulmonary tuberculosis was diagnosed in 1931, when she was 7 years of age, but was considered arrested after four years' treatment; for this reason the patient did not subsequently engage in any vigorous activities. In 1941, when she was 19, she was told that she had a heart murmur but that it was of no significance. There was no history of rheumatic fever. She stated that her pulse and blood pressure readings had always been difficult to obtain in her upper extremities but that she had been well until her first pregnancy, which terminated spontaneously at full term in July 1946. At that time she had severe but transitory pain in the left side of her neck posteriorly, radiating to her head. Her second pregnancy terminated normally in April 1949. During labor she noted pain identical to that of the previous pregnancy. After an uneventful spontaneous delivery while she was under ether anesthesia, she "went into shock." A laparotomy was performed because rupture of the uterus was suspected, but no abnormalities were found. The woman remained in a shocklike state for five or six days; then she regained consciousness. She was discharged well but three weeks after delivery began to have episodes of pain in the right posterior part of the neck, radiating to the occiput. These episodes lasted from a few minutes to an hour, every two or three days, gradually becoming less frequent up to the time of admission. About four weeks after delivery she began to feel weak and dizzy on arising in the morning or when standing up quickly. On several occasions she experienced brief periods of unconsciousness. In the eight months preceding admission there were frequent episodes of dyspnea during the day, not definitely related to activity, and infrequent occurrences of nocturnal dyspnea.

Physical Examination.—The patient was a well developed, well nourished young woman who did not appear ill. There was no edema, cyanosis or pallor. The heart was normal in size and outline to percussion; retromanubrial dulness was not increased. Heart sounds were clear; rate and rhythm were normal. With the patient in the sitting position there was a loud rough blowing systolic murmur with a gentle diastolic component heard well at the pulmonary area and even more prominently above the left clavicle. It was transmitted up the left side of the neck and was accompanied with a thrill, systolic in time. Rising from the recumbent to the sitting position produced a rise in pulse rate from 80 to 130. Carotid artery pulsations could not be felt. The left radial pulse was weak and inconstant; the right was not palpable. The femoral, dorsalis pedis and posterior tibial pulses were normal bilaterally. A blood pressure reading could not be obtained in the right arm but was 120 mm. of mercury systolic and 90 mm. diastolic in the left arm and 150 mm. systolic by palpation in each leg.

Laboratory Examinations.—Results of the following laboratory procedures were reported within normal limits: blood cell count, hematocrit, serologic tests for syphilis, blood urea nitrogen, fasting blood sugar and urinalysis. An electrocardiogram shortly after admission showed only a prolonged Q-T interval. A roentgenogram of the chest showed clear lung fields with the right side of the diaphragm high in the midsection, suggesting congenital anomaly. The heart was not enlarged; the pulmonary artery was prominent. Barium mixture passed freely through the esophagus without showing displacement by the heart. Fluoroscopy demonstrated a somewhat prominent pulmonary artery, with slight hilar dance on the right. The heart did not appear grossly enlarged or abnormal in contour. An angiocardiogram showed a dilated pulmonary artery and a distinctly abnormal aorta. At the proximal end of the transverse arch, one branch of the aorta was visualized. This branch was not large, but just beyond it the aorta immediately became much narrower. High in the descending aorta a convex shadow suggesting the infundibulum of a patent ductus arteriosus was seen. Beyond this point there was another diminution in the size of the aorta, and it was distinctly small at the lowest visible point.

Cardiac Catheterization.—In order to determine the presence or absence of left to right shunt, cardiac catheterization was performed Dec. 1, 1949. For arterial blood samples and pressure determinations, a 0.030 inch (0.076 cm.) (inside diameter) polyethylene tube was inserted percutaneously through a 15 gage needle into the right femoral artery. A 6 F Cournand cardiac catheter was introduced percutaneously through a 12 gage needle into the left femoral vein, since the arm veins were unsatisfactory.

Under fluoroscopic and direct-writing electrocardiographic control, the catheter was advanced without difficulty into the right ventricle. A few ventricular ectopic beats occurred, but these disappeared after ten or fifteen seconds. The cardiac mechanism seemed entirely normal for about three minutes, during which time intermittent electrocardiographic observations were made. At this point the patient became acutely anxious, uttered a piercing cry, became unconscious and deeply cyanotic and had generalized convulsive movements accompanied with slow stertorous respiration. The electrocardiogram showed ventricular fibrillation (*fig. 1*).

The cardiac catheter was immediately withdrawn to the vena cava, and resuscitative measures were instituted as rapidly as possible, the first being manual compression of the chest. Approximately two minutes after onset of fibrillation, 5 cc. of 1 per cent procaine hydrochloride solution was injected into the inferior vena cava through the cardiac catheter. Within three minutes, administration of 100 per cent oxygen was begun with a mask while manual compression of the chest continued. Between five and ten minutes after onset of ventricular fibrillation, an incision 15 cm. long was made in the left seventh interspace, centered over the anterior axillary line, and manual cardiac compression at the rate of 50 to 70 contractions per minute was then carried on continuously, except during the defibrillating attempts described later, for thirty-five minutes. Shortly after institution of cardiac compression, ten to fifteen minutes after onset of fibrillation, artificial respiration by manual compression was replaced by an automatic respirator. This

From the Cardiovascular Clinic (Clinic of General Medicine and Experimental Therapeutics of the National Heart Institute; Division of Hospitals, United States Public Health Service), United States Marine Hospital.

device,[1] employing a Burns valve, delivered 100 per cent oxygen at 20 cycles per minute and at a positive pressure alternating from 1 to 10 cm. of water.

Between the fifteenth and fortieth minutes after the onset of ventricular fibrillation, and while artificial respiration and cardiac compression were being continued, five shocks were administered to the heart with a defibrillating apparatus. For the first shock the electrodes were placed directly on the left

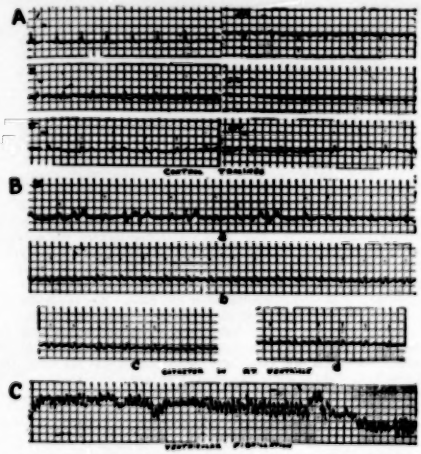


Fig. 1.—*A*, the top three strips are control electrocardiographic tracings before catheterization. They are normal except for slightly long duration of the Q-T interval. *B*, tracings a through *d* are intermittent recordings of lead 2 after introduction of the catheter into the right ventricle; *a* shows a rapid sinus rate and numerous ventricular extrasystoles probably arising from at least two different foci. *C*, the bottom strip, recorded shortly after the onset of ventricular fibrillation, shows a rate of approximately 575 per minute.

ventricular pericardium; the remaining shocks were delivered with one electrode on the left ventricular pericardium and with one electrode on the anterior chest wall. The first four shocks were of 135 volts and of one-half to one second's duration. The fifth shock was one second in duration at 100 volts. Each shock was accompanied with a generalized tetanic convulsion. Near the end of this period 20 cc. of 1 per cent procaine hydrochloride solution was injected directly into the heart. These measures were not effective (fig. 2).

After the fifth shock and the fortieth minute, 2 cc. of solution lidocaine hydrochloride (xylocaine hydrochloride)[2] 1 per cent in epinephrine hydrochloride 1:100,000 was injected directly into the left ventricle. The sixth shock—135 volts and one second's duration with electrodes on the precordium and ventricular pericardium—induced a transitory reversion to something resembling normal rhythm (fig. 3). Five cubic centimeters of the 1 per cent lidocaine-epinephrine 1:100,000 solution was injected directly into the left ventricular cavity. The seventh shock—135 volts, one and one-half seconds' duration—was followed by sino-auricular rhythm, rate 137, forty-five minutes after onset of ventricular fibrillation (fig. 4).

Course.—Since the cardiac contractions were not strong immediately after reversion, they were reinforced for approximately five minutes by manual compression of the ventricles during systole. The chest wound was closed with catheter drainage without anesthesia, and 500 cc. of whole blood was given intravenously. Recovery of motor function and consciousness was rapid, and thirty minutes after reversion the patient had a good color, blood pressure of 140 mm. of mercury systolic and 90 mm. diastolic, and pulse rate of 120; she was sufficiently rational to answer simple questions.

Oxygen was administered by nasal catheter for three days. Large doses of penicillin and streptomycin were given prophylactically, and small amounts of phenylephrine hydrochloride (neosynephrine®) were injected intravenously at intervals to support blood pressure. Intravenously given fluids and an additional 500 cc. of whole blood were administered during the first three days. For seventy-two hours blood pressure readings were taken through the femoral artery catheter by means of a Sanborn electromanometer. Pressures ranged from 140 systolic and 94 diastolic to 88 systolic and 60 diastolic, averaging approximately 120 systolic and 70 diastolic. The pulse rate gradually climbed to 160 on the second day and then fell slowly to the patient's normal level. The temperature rose to 102.2 F. on the second day and fell to normal by the fourth. Fluid intake was 3,600, 2,900 and 2,600 cc. in the first three days, while corresponding urinary outputs were 2,960, 2,330 and 2,160 cc. Five hundred cubic centimeters of serosanguineous fluid drained from the left side of the chest in the first twenty-four hours. About nine hours after reversion of the cardiac rhythm to normal the initial urine specimen was obtained by catheterization of the bladder (volume 300 cc., clear, dark, acid, specific gravity 1.026, 40 mg. of albumin per hundred cubic centimeters, 8 to 10 granular casts per low power field and some cylindroids). Subsequently, normal urine was voided spontaneously.

Immediately after reversion the patient was somewhat disoriented, slept a great deal and complained of generalized pain. She was always rational and cooperative and soon became

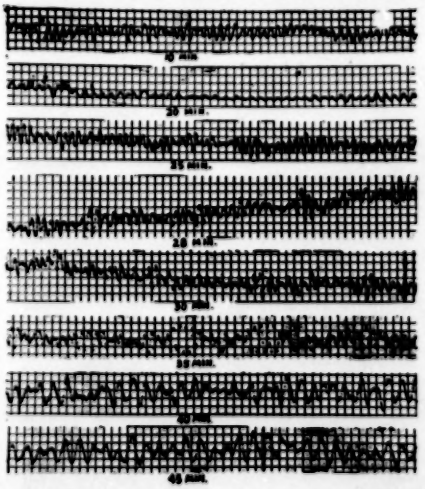


Fig. 2.—These are samples of continuous electroencephalographic tracings taken during forty-five minutes of ventricular fibrillation. Total time of fibrillation was fairly accurately indicated by the length of tracing accumulated. The principal trend observed is slowing of the rate of electrical activity from about 575 to about 180 per minute. The time shown beneath each tracing is the approximate time after the onset of fibrillation.

cheerful but had a memory defect embracing the first two days of recovery. Neurologic examination disclosed no abnormalities, and the patient's mentality, which was good, appeared entirely normal. There were no postoperative complications. The wound healed per primam, and the patient was discharged well on Dec. 20, 1949, to return at a later date for further

1. Pneophore,® manufactured by Mine Safety Appliance Corporation, Pittsburgh.

2. Supplied for clinical trial by Astra Pharmaceutical Products, Inc., Worcester, Mass.

study and treatment. Primary discharge diagnoses were patent ductus arteriosus and a congenital anomaly of the vessels arising from the aortic arch.

COMMENT

Electrocardiograms.—The control tracings shown in figure 1 *A* were within normal limits, although the duration of the Q-T interval was still at the upper limit

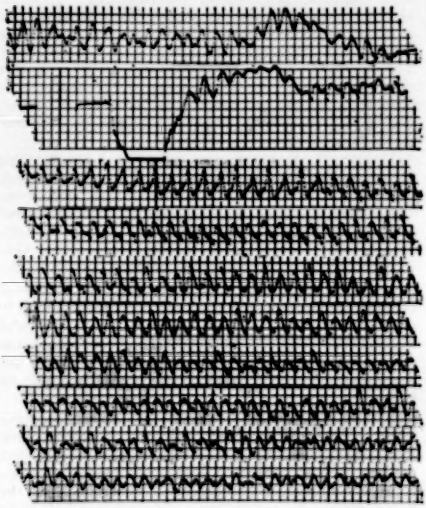


Fig. 3.—These continuous tracings from lead aVR show temporary reversion to normal rhythm after the sixth electric shock (second strip). There is return, however, to a less regular pattern.

of normal. The tracings marked *B* (*a* through *d*) comprise four short observations while the catheter was in the right ventricle; *a* was recorded shortly after the catheter had passed the tricuspid valve and shows numerous ectopic ventricular beats. Later these disappeared (*b*, *c* and *d*). Electrocardiographic tracings were not being made at the moment of onset of ventricular fibrillation. However, the record marked *a* in *B* of figure 1 shows a prefibrillatory pattern, consisting of an acceleration of the ventricular rate with many extrasystoles of multifocal origin.[3] Ventricular fibrillation at the time of onset was at a rate of about 575 per minute (fig. 1 *C*).

Figure 2 shows the appearance of ventricular electrical activity over the course of forty-five minutes while ventricular fibrillation was present. The most important feature is the trend toward slowing of the rate of ventricular activity until, in the records taken just before reversion, the rate is only about 175.

Figures 3 and 4 are continuous recordings of lead aV_R covering the period of reversion. In the second strip of figure 3, where the writing arm was driven off the paper, the sixth electric shock was applied to the heart. Immediately after this there was reversion to a pattern of more normal appearance with clearly discernible complexes arising probably from some focus in the ventricle. As seen in the third strip, however, this regular pattern escaped into a coarser one resembling ventricular flutter.[4] There is a temporary return of the previous pattern, but then the coarse flutter or fibrillation again appears. Finally, in figure 4 near the beginning of the next to the last strip, the seventh electric shock was applied. This resulted in almost instantaneous and permanent reversion to sinoauricular rhythm with a rate of about 135 per minute. P waves are clearly discernible following the T waves. The P-R interval may be slightly prolonged. It is interesting that there is electrical alternans for the first seven beats following reversion. Figures 5 and 6 show the electrocardiographic picture in the two hours and fifteen minutes after reversion to sinoauricular rhythm. There was an elevation of the S-T segment for thirty minutes. Lampson, Schaeffer and Lincoln[5] likewise observed S-T segment shifts immediately after reversion. The electrocardiograms showed flat T waves in the standard limb leads for several days, but five days after the episode the electrocardiogram was back to a normal picture except for sinus tachycardia. In fact, duration of the Q-T interval was now normal .

Ventricular Fibrillation as an Accident of Cardiac Catheterization.—In this clinic, where catheterizations are done under direct-writing electrocardiographic control, the experience has been that ventricular ectopic beats are invariable when the tip of the catheter enters the right ventricle from the auricle and when the catheter is withdrawn from the pulmonary artery to the ventricle. Runs of five or more ectopic ventricular beats are not uncommon. Extrasystoles are not common when the catheter is in the pulmonary artery, even though it passes through the ventricle, although we have observed them when the patient coughs or when the catheter is introduced as far as possible in order to occlude a radicle of the pulmonary artery. Such extrasystoles are presumably due to irritation of the endocardium by the side of the catheter. Ventricular

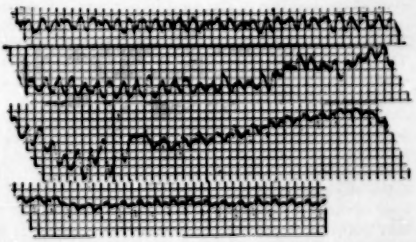


Fig. 4.—Lead aVR continued from figure 3 here shown reversion of ventricular fibrillation (return to normal rhythm) after the seventh electric shock (second strip).

fibrillation in the case reported here was probably due to endocardial irritation.

Resuscitation.—The importance of the several factors in the cardiac resuscitation has recently been empha-

3. Schwartz, S. P.: Transient Ventricular Fibrillation: Study of Electrocardiograms Obtained from Patient with Auriculoventricular Dissociation and Recurrent Syncopal Attacks, Arch. Int. Med. 49: 282 (Feb.) 1932.

4. Gertz, G.; Kaplan, H. A.; Kaplan, L., and Weinstein, W.: Cardiac Syncope Due to Paroxysms of Ventricular Flutter and Fibrillation, and Asystole in a Patient with Varying Degrees of A-V Block and Intraventricular Block: Report of a Case, Am. Heart J. 16: 225 (Aug.) 1938.

5. Lampson, R. S.; Schaeffer, W. C., and Lincoln, J. R.: Acute Circulatory Arrest from Ventricular Fibrillation for Twenty-Seven Minutes, with Complete Recovery, J. A. M. A. 127: 1575 (Aug. 28) 1948.

sized by Beck and Rand[6] and by Wiggin, Saunders and Small.[7] Both adequate oxygenation and circulation of the blood must be maintained until normal cardiac and respiratory action can be restored. Although some degree of oxygenation of the blood was apparently maintained for a relatively protracted period of time by

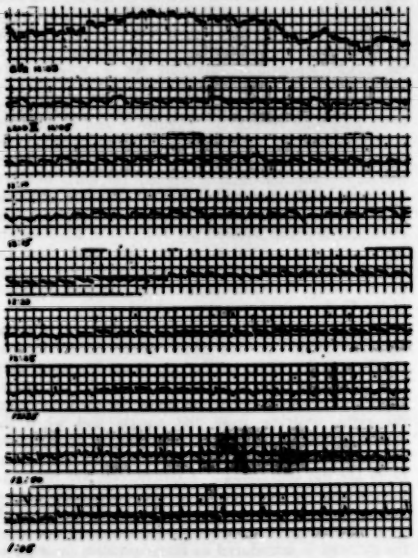


Fig. 5.—Sample tracings during the first hour after reversion. All except the first strip are lead 2. Elevation of the S-T segment persisted for about twenty-five minutes after reversion.

manual compression of the chest in our case, immediate use of an endotracheal tube and a respirator for administration of oxygen should be made whenever possible. The relatively inexpensive Burns valve apparatus was effective in this instance and was found to be technically simple in difficult circumstances.

The effectiveness of cardiac compression in maintaining the circulation was pointed out thirty years ago by Gunn[8] and has been repeatedly confirmed in man.[9] There seems to be general agreement that massage from below the diaphragm is ineffective. With regard to the type of thoracic incision, the important consideration is that adequate access to the heart be provided. It is encouraging to note that an 8-glove-size hand can be thrust through an anterolateral thoracic incision, although rib retraction is soon necessary since otherwise the ribs exert painful pressure against the hand and wrist of the operator.

In the case reported here, two types of defibrillating measures were employed. First, procaine hydrochloride and a similar substance, lidocaine hydrochloride, were injected intracardially; second, electric shock was applied. It is our impression that reversion was due to a combination of these two measures. It seems significant that five shocks relatively early in the course of events were ineffective. Later, after more procaine and after lidocaine had been given, shock was effective. The slowing of rate of fibrillation was progressive over the course of the forty-five minutes. This slowing may have been due to the drugs administered. However, that it was due in part or entirely to progressive myocardial anoxia cannot be excluded.

The electric defibrillator which we used was intended for emergency resuscitation of dogs undergoing cardiac operations. It consists of a variable voltage transformer (peak voltage 135, rating 5 amperes), two lead wires and two electrodes. A peak voltage of 135 of sufficient intensity and duration to render the entire ventricular musculature refractory may be used to revert ventricular fibrillation.[10] Low voltage shocks, or shocks of short duration or low intensity, will not only fail to effect reversion but will actually precipitate ventricular fibrillation in dogs. A variable voltage transformer was chosen as the easiest means of securing 135 volts, but a transformer with a fixed voltage would probably be safer and simpler for occasional emergency resuscitation. The amperage need not be specifically regulated, since it is determined by the size and composition of the electrodes. In the apparatus we used the electrodes consisted of 0.5 mm. thick sheet aluminum disks, 3.6 cm. in diameter. These were applied directly to the heart and to the precordium with some arcing. The amperage delivered to a human heart by this equipment is not known, but it is believed that aluminum is not the material of choice and that the electrodes are considerably smaller than the optimal. Beck and Rand[6] have suggested that silver electrodes approximately 6 cm. in diameter are satisfactory for human use.

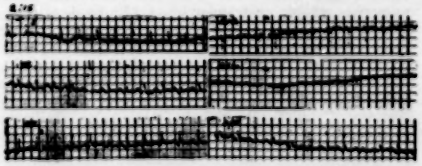


Fig. 6.—Approximately one hundred and thirty-five minutes after reversion to sinoauricular rhythm, the limb leads show sinus tachycardia and flat to inverted T waves. The P-R interval is at the upper limit of normal.

SUMMARY

A case of ventricular fibrillation as a complication of cardiac catheterization is reported. Effective oxygenation was maintained by cardiac compression and artificial respiration. Normal rhythm was restored after administration of procaine hydrochloride, lidocaine hydrochloride (xylocaine hydrochloride) with minute amounts of epinephrine and electric shock. The patient recovered completely after at least forty-five minutes of ventricular fibrillation.

6. Beck, C. S., and Rand, H. J., III: Cardiac Arrest During Anesthesia and Surgery, J. A. M. A. 141:1230 (Dec. 24) 1949. Beck, C. S.; Pritchard, W. H., and Feil, H. S.: Ventricular Fibrillation of Long Duration Abolished by Electric Shock, J. A. M. A. 135:985 (Dec. 13) 1947.

7. Wiggin, S. C.; Saunders, P., and Small, G. A.: Resuscitation, New England J. Med. 241:370 (Sept. 8) 1949.

8. Gunn, J. A.: Massage of Heart and Resuscitation, Brit. M. J. 1:9 (Jan. 1) 1921.

9. Burichs, K. R., and Nicholson, M. J.: Cardiac Arrest Under Anesthesia, J. A. M. A. 125:622 (Nov. 6) 1947. Adams, H. D., and Hood, L. V.: Twenty Minute Cardiac Arrest with Complete Recovery: Principles of Prevention and Treatment, ibid. 133:133 (Jan. 10) 1942. Lampson, Schaeffer and Lincoln.[5] Beck and Rand.[6] Wiggin, Saunders and Small.[7]

10. Morgan, R. H.: Personal communication to the authors.

TREATMENT OF HYPERTENSION

Experiences with the Use of a Low Sodium Diet Other Than the Rice Diet: A Preliminary Report

MORLEY J. KERT, M.D.
MARVIN J. ROSENBURG, M.D.
EUGENE L. COODLEY, M.D.
L. JEAN MURDOCK, B.S.
STANLEY N. HOFFMAN, M.D.
EDWARD J. BROTMAN, M.D.
and
WALTER L. JOHNSTON, M.D.
Los Angeles

Physicians have been restricting sodium chloride in the diets of patients with hypertension with varying degrees of enthusiasm since 1904.[1] Apparently as early as the turn of the century this dietary restriction was under active consideration in Europe, but it was not until 1922 when Allen and Sherrill[2] reported satisfactory results in a series of 180 patients that we hear of this treatment in the United States. The method was not generally accepted by members of the medical profession, however, and contemporary reports of smaller series of cases[3] did not confirm Allen's original results. In 1928 Addison[4] pointed out that it was the sodium ion in the restriction of sodium chloride which was the effective agent.

In 1944 with Kempner's report[5] of satisfactory results with a rice and fruit juice diet there was a rebirth of interest in the dietary treatment of hypertension. It was evident, however, that the Kempner regimen was low not only in sodium (200 mg.) but also in protein (20 to 25 mg.) and fat (5 Gm.). In spite of his favorable results, many physicians hesitated to employ a treatment which violates the conventional pattern of nutrition. Moreover, it was difficult to induce many patients to accept the monotony of the diet. Today these objections are superseded by the opinions of many investigators[6] that the rice and fruit juice treatment is effective solely because of its low sodium content. Recently a few workers, notably Grollman,[7] Perera and Blood[8] and Bryant and Blecha,[9] have treated groups of hypertensive patients with a diet low in sodium but adequate in other respects. All these reports indicate favorable results, but to date the total number of patients treated is small. It is our hope to observe over a five year period a large number of patients with hypertension whose diets are restricted in sodium only. For the past twenty months in the Hypertension Clinic of the Wadsworth General Hospital we have been treating a number of patients in this manner. Inasmuch as the time interval is still short and the number of patients small, this report must of necessity be a preliminary one.

TABLE 1.—*Low Sodium Diet of 2,400 Calories (Approximately 200 Milligrams)*

Food*	Amount: Wt., Gm.	Amount: Measure	Sodium, Mg.	Potassium, Mg.	Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories	Ca Mg.
Meat, cooked	120	4 oz.	75.0 to 120	375 to 600	29	16	—	255	10
Egg	50	1	40.0	100	6	6	—	80	30
Peanuts	60	50 to 55 nuts	1.0	444	16	36	14	356	44
Fruit									
1 citrus	100	½ cup	0.5	200	1	—	11	50	20
2 others	200	½ cup each	1.0 to 10	100 to 400	1	—	30	130	20
Vegetables	200	2 servings, ½ cup each	2.0 to 24	580 to 1,600	5	—	15	85	40
Potato or substitute	200	2 servings, ½ cup each	2.0 to 4	130 to 530	4	—	38	170	20
Cereal	30, dry	½ cup cooked	0.2 to 1	19 to 100	3	1	15	80	10
Bread	90	3 slices	25.0	120	7	3	45	240	30
Butter	50	5 pats	2.5	2	—	40	—	350	—
Salt free milk[10]	480	1 pint	5.0	837	17	18	24	320	540
Fruit juice	400	2 glasses	2.0 to 12	400 to 800	1	—	40	204	40
Jelly	40	2 tbs.	2.0	11	—	—	28	110	—
Total			158.2 to 247.0	3,318 to 5,144	90	110	269	2,450	804

* Bills, C. E.; McDonald, F. G.; Niebermeier, W., and Schwartz, M. C.: Sodium and Potassium in Foods and Waters, J. Am. Dietet. A. **25**: 301, 1949. United States Veterans Administration Diet Manual M10-4, Washington, D. C., Government Printing Office, 1948, Part III, Adaptation of Short Method of Dietary Analysis. Donelson, E. G., and Leichsenring, J. M.: Food Composition Table for Short Method of Dietary Analysis (revised), J. Am. Dietet. A. **21**: 140, 1945. Bowes, A. deP., and Church, C. F.: Food Values of Portions Commonly Used, ed. 6, Philadelphia, Anna dePlanter Bowes, 1946.

METHOD AND MATERIAL

The majority of the patients in this study were referred to the Hypertension Clinic from the various wards of the hospital. A few are from the private practice of one of us (M. J. K.). A patient was included in the study if his base line blood pressure was 170 systolic and 100 diastolic or over, regardless of the etiologic factor, unless surgically remediable. Once selected, the patient is subjected to a work-up which includes, in addition to the hospital routine, an electrocardiogram, roentgenogram of the heart, fundus examination by the Department of Ophthalmology, renal function tests and determinations of blood chlorides, sodium, potassium and frequently calcium. Blood pressure is determined

From the Medical Service, Wadsworth Hospital, Veterans Administration Center, and the Department of Medicine, University of California.

Sponsored by the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions of the authors are the result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

Read before the nineteenth annual Symposium on Heart Disease, Los Angeles Heart Association, Oct. 19, 1949.

1. Ambard, L., and Beaujard, E.: Causes de l'hypertension arterielle, Arch. gén. de méd. **1**: 520, 1904.

2. Allen, F. M., and Sherrill, J. W.: Treatment of Arterial Hypertension, J. Metabolic Research **2**: 479, 1922.

3. (a) O'Hare, J. P. and Walker W. G.: Observations on Salt in Vascular Hypertension, Arch. Int. Med. **29**: 263 (Aug.) 1923. (b) Berger S. S., and Pinsberg, M. A.: The Effect of Sodium Chloride on Hypertension, ibid. **44**: 531 (Oct.) 1929.

4. Addison, W. L. T.: The Use of Sodium Chloride, Potassium Chloride, Sodium Bromide and Potassium Bromide in Cases of Arterial Hypertension Which Are Amenable to Potassium Chloride, Canad. M. A. J. **18**: 281, 1928.

5. Kempner, W.: Treatment of Kidney Disease and Hypertensive Vascular Disease with Rice Diet, North Carolina M. J. **5**: 125, 1944.

6. Selye, H.: The General Adaptation Syndrome and Disease of Adaptation, J. Clin Endocrinol. **6**: 117, 1946. Schroeder, H. A.: Low Salt Diets and Arterial Hypertension, Am. J. Med. **4**: 578, 1948. Dietary Therapy of Hypertension, editorial, J. A. M. A. **137**: 147 (May 8) 1948.

7. Grollman, A.: Sodium Restriction as a Dietary Measure in Hypertension, J. Am. Dietet. A. **22**: 864, 1946.

8. Perera, G. A., and Blood, D. W.: The Relationship of Sodium Chloride to Hypertension, J. Clin. Investigation **26**: 1109, 1947.

9. Bryant, J. M., and Blecha, E.: Low Sodium-Forced Fluid Management of Hypertensive Vascular Disease and Hypertensive Heart Disease, Proc. Soc. Exper. Biol. & Med. **66**: 227, 1947.

daily for at least ten days, and the lowest is considered the pretreatment level. In some instances Veterans Administration charts of many years' standing are available to substantiate the presence of hypertension.

The diet used in this study is based on the 200 mg. sodium regimen devised by Newburgh.[10] It has been made up to contain 1,800, 2,400 or 3,000 calories, depending on the needs of the patient. Table 1 illustrates the 2,400 calory diet and the adequate protein and other values, notwithstanding the rigid restriction of sodium. The patients are instructed to drink eight or nine glasses of distilled water daily, and for those whose diets do not contain the salt-free milk [11] calcium is added in the form of the diphosphate. Some of the patients take vitamins in addition, although, as table 2 illustrates, the diet satisfies vitamin requirements.

Table 2.—*Total Value of Daily Food Allowance on 2,400 Calory Low Sodium Diet (Approximately 200 Milligrams)*

Phosphorus	1,346	mg.
Iron	15.6	mg.
Vitamin A	4,220	I. U.
Thiamine	1.62	mg.
Riboflavin	1.57	mg.
Nicotinic acid	22.5	mg.
Ascorbic acid	162	mg.

Table 3.—*Two Hundred Milligram Sodium Diet*

Food Groups	Suggested Foods from Which to Choose			
Meats	Beef Chicken Cod, fresh	Halibut, fresh Lamb Pork	Rabbit Salmon, fresh Turkey	Veal
Nuts, unsalted		Almonds Brazil	Pecans Peanuts	
Egg				
Fruits	Apples Apricots Bananas Blackberries Cherries Cranberries	Figs Gooseberries Grapefruit Grapes Lemons Limes	Mulberries Oranges Peaches Pears Pineapple Plums	Raspberries Rhubarb Strawberries Tangerines Watermelon
Vegetables	Asparagus Beans, green Beans, lima Beans, navy Broccoli Brussels sprouts	Cabbage Corn Cucumbers Eggplant Endive Lettuce	Mushrooms Onions Parsnips Peas Pepper, green Pumpkin	Squash (all kinds) Tomatoes Turnips
Potato and substitutes		Macaroni Potato, sweet	Potato, white Rice	Spaghetti
Bread and cereals	Bread, unsalted Cornmeal, yellow Farina Maltex *	Matzoth, unsalted Oatmeal Instant Ralston * Rice, puffed	Wheat, shredded Wheatena *	
Fat	Butter, sweet	Other unsalted fats		
Beverages	Coffee, clear Lonalac * Tea, clear	Fruit juices: apple, grape	Grapefruit Lemonade Lime	Orange Pineapple Prune
Miscellaneous	Allspice Bay Caraway	Celery seed Garlic Honey	Jelly Mustard, dry Nutmeg	Paprika Pepper Vanilla Vinegar

* Registered tradename.

Table 4.—*Sodium Content of Sample Day's Diet as Determined by the Flame Photometer Method 200 Milligrams*

Date Analyzed	Total Average Mg. Sodium
Jan. 10	428
Feb. 28	183
May 23	295
May 24	337
July 25	560

Table 1 illustrates the adequate protein and other values, notwithstanding the rigid restriction of sodium. The patients are instructed to drink eight or nine glasses of distilled water daily, and for those whose diets do not contain the salt-free milk [11] calcium is added in the form of the diphosphate. Some of the patients take vitamins in addition, although, as table 2 illustrates, the diet satisfies vitamin requirements.

Table 3 demonstrates the wide selection of food permitted by the diet. While the patient is still in the hospital he and the household cook are instructed in the proper utilization of these varieties of food and in intelligent use of the condiments listed. After the patient has obtained an adequate understanding of the diet he is discharged to the convalescent wards of the hospital or returns home. He is seen subsequently every two to four weeks in the Hypertension Clinic.

On each return visit to the clinic the patient's course is evaluated by the physician on a special chart where symptoms, blood pressure readings and the results of tests are recorded. An estimation of the twenty-four hour chloride excretion is then performed by the dietitian. This simple test [12] consists of titrating 10 drops of urine and 1 drop of 5 per cent potassium chromate with 2.9 per cent silver nitrate solution until a reddish color change is obtained. Each drop of silver nitrate used represents approximately 1 Gm. of sodium chloride excreted per twenty-four hours. Recently we adopted a modification of the test,[13] but the principle is essentially the same. Some patients perform their own tests at home and bring in charts of their results for discussion of any apparent dietary indiscretion. The dietitian then proceeds in detective-like fashion to ferret out the excess sodium by reviewing all foods eaten by the patients.

The 200 mg. sodium trays in the hospital are also under repeated surveillance, and from time to time the sodium content of a sample day's diet is determined by the flame photometer method. Table 4 is an example of some of the results obtained.[14] We are not surprised occasionally to find that the sodium content is excessive, and it is only by repeated checking that the diet can be kept in the desired sodium range. Furthermore, it is our impression that a well instructed patient at home can more closely approximate a 200 mg. sodium diet than is possible in a hospital kitchen.

Although there is no general agreement [15] as to the effect of weight loss in hypertension, it seems important to us to take into account any significant weight reduction by the patients in this series. At first, a 1,200 calory low sodium diet was prescribed for obese patients, but recently such patients have not been placed on sodium restriction until their optimum weight is approached by means of a regular low calory diet. Since much of the data accumulated thus far pertains to simultaneous weight reduction and sodium restriction, we have considered it necessary to indicate in our results when significant weight loss (10 pounds [4.5 Kg.] or more) has occurred. However, we will not at this time attempt to evaluate the influence of such weight loss.

RESULTS

No patient was included who has been on the diet for less than three months, and although we have observed over 100 patients in the clinic, we will at this

10. Diet Manual of University Hospital, University of Michigan, Ann Arbor, Mich., George Wahr, 1947, p. 27.

11. Lonalac,® product of Mead Johnson & Company.

12. Fantus, B.: Fluid Postoperatively, J. A. M. A. 107:14 (July 4) 1936.

13. Bryant, J. M.; Ich, V.; Phillips, G. L., and Bleeks, E.: Estimation of Urinary Sodium, J. A. M. A. 140:870 (June 25) 1949.

14. These studies were done in the metabolic research unit under the direction of Dr. S. H. Bassett.

15. Ayman, D.: Present Day Treatment of Essential Hypertension, M. Clin. North America 28:1141, 1944. White, P. D.: The Management of Hypertension, Ann. Int. Med. 27:740, 1947.

V 1
195

time report on only 59. Fifty-one are males and 8 females. The largest number of patients, 32, are in the age group 50 to 59; 11 are in the 60 to 69 group; the remaining 16 are distributed among the other groups ranging from 25 to 75. Thirteen of the patients have been followed twelve to sixteen months, 18 seven to eleven months and 28 three to six months.

Despite the careful dietetic supervision not all the patients were equally successful in following the diet. If a patient averaged 1 to 2 Gm. of chloride excretion per twenty-four hours as determined by the rough urinary test, he was considered to be a strict adherent to the diet. Those that averaged 2 to 3 Gm. were classified as moderate adherents, and those with over 3 Gm. of chloride excretion per twenty-four hours, as poor followers of the diet. According to this classification 36 patients adhered strictly to the diet and 17 moderately; the remaining 6, who were poor followers, could not possibly be considered to be on the 200 mg. sodium regimen.

Twenty-one of the 59 patients had no change in weight and 9 gained weight. Therefore, in slightly over 50 per cent of the patients weight loss could not be considered a significant factor in any results obtained. Of the 29 patients who lost weight, 10 lost less than 10 pounds. We considered that only 19 (32 per cent of the group) had a significant weight loss.

The most difficult and controversial aspect of any report dealing with hypertension is to determine what constitutes a significant reduction in blood pressure. The methods have varied with different authors. Kempner [16] considered improvement to equal a decrease of 20 in the mean arterial pressure; Fishberg [17] accepted a 25 per cent reduction in diastolic and a 25 per cent reduction in systolic; Berger and Fineberg [3b] evaluated the trend of the blood pressure curve; Bryant and Blecha [5] used a blood pressure fall to 155 systolic and 95 diastolic. We have adopted the Smithwick classification of diastolic reduction, group 1 representing a diastolic reduction of 30 mm. of mercury or more, group 2 of 20 to 29 mm., group 3 of 10 to 19 mm.; group 4, 0 to 9 mm., and group 5 to represent any increase in the diastolic pressure. In our results we will consider those patients in groups 1, 2 and 3 as having a significant drop in blood pressure. In addition, we have categorized those patients who have had a reduction in blood pressure to 155 systolic and 95 diastolic or less.

As has previously been stated, no patient was included in the series whose pretreatment blood pressure level was lower than 170 systolic and 100 diastolic. The majority of the patients (34, or 60 per cent of the group) had diastolic pressures of 120 mm. of mercury or more.

Blood Pressure Response.—Twenty per cent of the patients had a reduction in blood pressure to 155 systolic and 95 diastolic or less; 13.5 per cent fitted into groups 1 and 2 of the Smithwick classification, and 29.5 per cent into group 3. Fifty-four per cent remained essentially the same, and 3 per cent progressed. The number of patients with a significant drop in blood pressure would range from 13.5 to 43 per cent, depending on the criteria used, with an average of these methods indicating that 25 per cent of the patients had a significant reduction in blood pressure. Of all the patients whose blood pressure fell decidedly only 1 did not adhere to the diet, and slightly less than half of these patients had a significant reduction in weight.

Symptomatic Response.—Forty-six of the patients suffered from a typical hypertensive headache. Of these, 40 improved and none progressed. Seven of the patients whose headaches were incapacitating obtained complete relief after the diet was instituted. Of 36 patients who complained of dizziness 25 improved and 2 became worse. It is interesting that 25 of 33 patients with insomnia showed improvement. This has been noted in the psychiatric literature [18] and is, we believe, worthy of further study. Seven of 16 patients with angina definitely improved, and only 1 progressed.

Of the patients who responded symptomatically over 90 per cent adhered to the diet, approximately one half had a significant blood pressure drop and about one third had a significant weight loss. It is apparent that some patients obtained symptomatic relief with neither blood pressure drop nor weight loss, i. e., 42.5 per cent of the patients who had headache and 38 per cent of those with tinnitus obtained relief on the diet without blood pressure drop or weight loss.

Objective Improvement.—Thirty-one patients had involvement of the ocular fundi, grade 2 or more according to the Keith-Wagener classification. Eleven improved, and all 11 followed the diet. Five of the 31 patients had papilledema, and in all 5 the papilledema subsided. Four of these 5 did not have a significant drop in blood pressure. In addition, 3 of the 5 patients had clearing of hemorrhages and exudates, (improved from a Keith-Wagener grade 4 to a grade 2). Thirty-four patients had electrocardiographic evidence of left ventricular enlargement with or without myocardial changes. Nine improved and 1 progressed.

Fifteen patients had elevation of the blood urea nitrogen plus other evidence of impaired renal function; 7 showed improvement in renal function; 7 remained essentially unchanged, and 1 progressed. The last-mentioned patient was the only one in the series to die. This man, aged 60, after four months on the diet with slight subjective improvement, manifested a rising diastolic blood pressure to 160 mm. of mercury, became comatose and after several weeks died in uremia. Postmortem examination revealed decidedly contracted kidneys. The death in this instance was due finally to a lack of an adequate number of functioning nephrons, and it is highly problematic whether the diet played any part in initiating the final picture.

Twenty-two of the patients had roentgen evidence of cardiac enlargement. To date we are unable to say that any patient showed radiologic evidence of decrease in heart size which could definitely be attributed to the diet.

Contraindications to the Diet.—There have been repeated warnings in the literature regarding the administration of a low sodium diet in the presence of impaired renal function.[19] In no instance, however, have we ever denied a patient the diet because of renal disease. All such patients are carefully observed, and frequent determinations are made of the urea nitrogen,

16. Kempner, W.: Treatment of Hypertensive Vascular Disease with Rice Diet, Am. J. Med. 4: 545, 1948.

17. Fishberg, A. M.: Sympathectomy for Essential Hypertension, J. A. M. A. 137: 670 (June 19) 1948.

18. Miller, M. M.: Low Sodium Chloride Intake in the Treatment of Insomnia and Tension States, J. A. M. A. 129: 262 (Sept. 22) 1945.

19. Macguire, W. B.: Risk of Uremia Due to Sodium Depletion, J. A. M. A. 137: 1377 (Aug. 14) 1948. The Treatment of Hypertension, editorial, ibid. 135: 576 (Nov. 1) 1947. Thorn, G. W.: Treatment of Renal Insufficiency, J. Urol. 59: 119, 1948.

sodium and chloride of the blood. To date we are of the opinion that it is seldom necessary to add sodium chloride to the diet of these patients. As our results indicate, only 1 patient who began the diet with poor renal function had a progressive renal course. The addition of sodium chloride was of no benefit.

Excessive sweating in a warm climate is also mentioned as a contraindication to the strict use of the diet. However, Conn, Johnston and Louis [20] have pointed out that persons respond to a diminished sodium intake by reducing the concentration of salt in the sweat, thereby conserving body salt. In our experience here in southern California we have never found it necessary to add sodium chloride to the diets of our patients, even those engaged in strenuous physical labor.

SUMMARY AND CONCLUSION

1. Fifty-nine patients with hypertension were treated with a diet containing approximately 200 mg. of sodium, but adequate in other respects. Thirty-six patients were able to adhere strictly to the diet. Seventeen adhered to it moderately well. Six followed it poorly. Nineteen of the 59 patients had a significant loss in weight.

2. About 25 per cent of the patients had a significant drop in blood pressure. Approximately 45 per cent of the patients who obtained this significant blood pressure drop also had a significant weight loss. At present we are unable to evaluate the influence of weight loss in our results.

3. The majority of the 59 patients obtained substantial relief of the symptoms usually attributable to hypertension. The most striking result was that 87 per cent of the patients who complained of headaches were either decidedly improved or completely relieved of this symptom.

4. All the patients in the series with papilledema improved.

5. The large percentage of the patients with diminished renal function tolerated the diet well, with improvement in both their hypertensive status and renal function.

6. The diet probably is easier for the patient to follow than the rice and fruit juice diet, but because of the wide variety of foods allowed the physician is less certain that the strict reduction of sodium is effected. It is essential to check the urinary chloride excretion or preferably sodium excretion, the latter being more accurate but less practical.

7. The cases reported herein are too few for definitive statistical analysis.

6228 Wilshire Boulevard.

20. Conn, J. W.; Johnston, M. W., and Louis, L. H.: Relationship Between Salt Intake and Sweat Salt Concentration Under Conditions of Hard Work in Humid Heat, Federation Proc. 5:230, 1946.

Millions of Gifts to Relieve Suffering.—According to the U. S. State Department Germans received from the American people between June 1946 and June 1950 more than 39,000,000 gift parcels containing 256,000 tons of food, clothing and similar items for relief of human suffering. The contents of these parcels and their postage represent contributions by the American senders totaling some $325,000,000, according to figures compiled by the Office of the U. S. High Commissioner for Germany.—*Monthly Information Sheet*, U. S. State Department, June 1950.

AUREOMYCIN IN THE TREATMENT OF GONORRHEA

Study of One Hundred Cases

CALVIN H. CHEN, M.D.
ROBERT B. DIEHST, Ph.D.
and
ROBERT B. GREENBLATT, M.D.
Augusta, Ga.

In a preliminary paper [1] we reported that aureomycin could be used more effectively in the treatment of gonorrhea than was earlier observed by other investigators.[2] In the first 20 consecutive patients treated by us with a dosage of 1 Gm. of aureomycin three times daily for two days, 100 per cent success was obtained. Moreover, the majority of patients became completely symptomless after 3 Gm. or less of aureomycin had been taken. Therefore, our impression was that a one-day treatment, consisting of three doses of 1 Gm. each, would suffice. In order to ascertain this point and to further investigate the value of aureomycin in the treatment of gonorrhea, we undertook this study.

METHODS AND RESULTS

A series of 100 unselected patients with laboratory-proved cases of gonorrhea was arbitrarily divided into two groups of 50 patients each. Group A was given 6 Gm. and group B 3 Gm. of aureomycin, to be taken orally in 1 Gm. doses three times daily at home. An adjustment was made for an 11 year old child in group B, who was given 750 mg. instead of 1 Gm. per dose. All patients were directed to return in a week for reexamination. During these reexaminations three things were done: 1. Questions were asked as to when the presenting symptoms, if any, completely subsided and whether or not drug reactions occurred. 2. A careful local examination was made. 3. A culture was taken from a urine specimen in the male subjects and from the urethra and the cervix in the female subjects. If any urethral exudate was seen in the male subjects a smear was made, and in these cases the culture was taken from the anterior urethra with a swab instead of from the urine specimen. All cultures were done on Peizer medium. The clinical data and results are shown in tables 1 and 2.

COMMENT

From tables 1 and 2, it will be noted that the treatment failed in only 1 patient in each group of 50 patients treated. Accordingly, the results obtained in these two groups were identical, each group having a rate of cure of 98 per cent. Of the 35 patients in group A who had an accurate idea of when their symptoms had completely disappeared, 24 (approximately 70 per cent) said this occurred after 3 Gm. or less of aureomycin had been taken. These observations confirm our

From the University of Georgia School of Medicine.

The aureomycin capsules used in this study were supplied by Lederle Laboratories Division of the American Cyanamid Company.

Aided by a grant from Research Grants and Fellowships Division, National Institutes of Health, United States Public Health Service.

Dr. Abe Davis, Health Commissioner for Richmond County Health Department, Augusta, furnished the clinical material and the laboratory work for this study.

1. Chen, C. H.; Diehst, R. B., and Greenblatt, R. B.: Oral Administration of Aureomycin in the Treatment of Gonorrhea, Urol. & Cutan. Rev. 53:394-397 (July) 1949.

2. Finland, M.; Collins, H. S., and Paine, T. F.: Aureomycin, a New Antibiotic: Results of Laboratory Studies and of Clinical Use in 100 Cases of Bacterial Infections, J. A. M. A. 139:946-949 (Nov. 27) 1948. Collins, H. S.; Paine, T. F., Jr., and Finland, M.: Clinical Studies with Aureomycin, Ann. New York Acad. Sc. 51:231 (Nov. 30) 1948.

former belief that aureomycin, when given orally in the dosage of 1 Gm. three times daily for one day, would be as effective as the same daily dose given for two days.

The conditions of these two groups were comparable. There were 40 male subjects and 10 female subjects in group A and 43 male subjects and 7 female subjects in group B. The average age in group A was 25.2 years and in group B 25.6 years, with the majority of patients between 15 and 30 years of age. Although the duration of the disease varied from one day to two months, most of the patients had had symptoms for one to seven days, and most had gonorrhea of the acute anterior urethritic type.

The duration of the disease did not seem to have any influence on the speed of recovery. It is of interest to note also that in 10 of these 100 patients the condition had failed to respond to other forms of therapy: penicillin (in 7), chloramphenicol (in 2) and sulfonamide drugs (in 1).

TABLE 1.—*Results of Oral Administration of 6 Gm. Aureomycin to 50 Patients with Gonorrhea (Group A)*

	Number of Patients
Patients	
Male	40
Female	10
Race	
White	12
Negro	38
Age (years)	
Youngest 16	..
Oldest 48	..
Average 25.2	..
Duration of disease (days)	
Shortest 1	..
Longest 60	..
Average 5.9	..
Previous medication for present illness	
Penicillin injections	3
Penicillin tablets	1
Chloramphenicol capsules	1
Sulfonamide tablets	1
Total	6
Dosage for complete cessation of symptoms (Gm.)	
2	11
3	13
4	1
5	1
6	9
Drug reactions	
Nausea	4
Vomiting	2
Diarrhea	1
Malaise	1
Gaseous distention	1
Drowsiness	1
Dizziness	1
Results	
Cured	49
Failed	1

Eleven patients in group A and 7 in group B complained of some reactions from the aureomycin. These reactions ranged from slight nausea and dizziness to vomiting and diarrhea. Most of the reactions occurred late in the course of treatment and none were severe enough to call for an interruption of the medication. However, there was a patient who vomited every dose of aureomycin. For that reason, she could not be included in this study.

The standard treatment for gonorrhea at present consists of one intramuscular injection of 300,000 units or less of penicillin in some prolonging agent. This form of therapy, according to the record of the clinic of the

TABLE 2.—*Results of Oral Administration of 3 Gm. Aureomycin to 50 Patients with Gonorrhea (Group B)*

	Number of Patients
Patients	
Male	43
Female	7
Race	
White	5
Negro	45
Age (years)	
Youngest 11	..
Oldest 48	..
Average 25.6	..
Duration of disease (days)	
Shortest 1	..
Longest 35	..
Average 6.7	..
Previous medication for present illness	
Penicillin injections	1
Penicillin tablets	2
Chloramphenicol capsules	1
Total	4
Dosage for complete cessation of symptoms (Gm.)	
1	2
2	7
3	30
Drug reactions	
Nausea	4
Vomiting	1
Dizziness	1
Drowsiness	1
Results	
Cured	49
Failed	1

Richmond County Health Department, where the present study was carried out, is successful in approximately 90 per cent of cases.[1] Mahoney and Thayer and Jacoby and associates reported somewhat better results, ranging from 93 to 95 per cent.[2] (The 100 per cent cure claimed by others was achieved with more than one injection of penicillin.[4]) Therefore, it is apparent that orally administered aureomycin in the dosages employed in this study is at least as effective as one injection of penicillin against gonorrheal infections. Although 100 patients do not constitute a large series, we feel that it is large enough for the purpose of obtaining a general idea as to the efficacy of a drug and that the results from the study of a larger series will probably not be significantly different.

The rates of cure with chloramphenicol, used orally in 24 patients with gonorrhea treated with 1 Gm. three

---

3. Mahoney, J. F., and Thayer, J. D.: Bacterial and Mycotic Infections of Man, edited by Dubos, R. J., Philadelphia, J. B. Lippincott Company, 1948. Jacoby, A.; Ollwerg, A.; Freund, J., and Rosenthal, T.: Ambulatory Treatment of Gonorrhea with Penicillin Preparations, Am. J. Syph., Gonor., & Ven. Dis. 32:133-138 (March) 1948.

4. Parkhurst, G. E.; Harb, R. W., and Cannefax, G. R.: "Penicillin-Resistant Gonorrhea" vs. "Nonspecific Urethritis," Ven. Dis. Inform. 28:211 (Oct.) 1947. Hughes, R. P., and Carpenter, C. M.: Alleged Penicillin-Resistant Gonorrhea, Am. J. Syph., Gonor., & Ven. Dis. 32:265-271 (May) 1948. Cohn, A.; Grunstein, I.; Goldberg, R., and Crane, J.: So-Called Penicillin-Resistant Gonococcal Infections, A Clinical and Laboratory Study, Am. J. Syph., Gonor., & Ven. Dis. 33:86-90 (Jan.) 1949.

times daily for one and two days, were 70 to 92.6 per cent, respectively.[5] Robinson and Robinson, using various dosage schedules, obtained 70 to 100 per cent success in 13 patients with gonorrhea.[6] Since the number of patients treated with chloramphenicol is small, further study is necessary before the position of this antibiotic can be properly evaluated. The lesser toxicity of chloramphenicol is its advantage over aureomycin.[5]

SUMMARY AND CONCLUSIONS

One hundred patients with laboratory-proved cases of gonorrheal infection were arbitrarily divided into two equal groups. Group A was given 1 Gm. of aureomycin orally three times daily for two days (6 Gm.), and group B was given the same daily dose for one day (3 Gm.). The results obtained from these two groups were identical: there was one failure in each group. Thus, the percentage of cure was 98 in each group. It was further noted that the majority of patients in group A were symptom free after 3 Gm. or less of aureomycin had been taken. Therefore, the 3 Gm. dosage seems sufficient. Toxic reactions were few and not serious. In several patients the disease, which had failed to respond to penicillin and other medication, yielded to aureomycin treatment. In view of this fact, plus the high percentage of cure and the comparatively simple method of administration, we feel that aureomycin has its definite value in the treatment of gonorrhea.

ANEMIA FOLLOWING USE OF ANTIHISTAMINIC DRUGS

JAMES J. CRUMBLEY Jr., M.D.
Philadelphia

The purpose of this report is to call attention to the occurrence of hemolytic anemia in 3 patients who had received antihistaminic drugs over long periods of time. Since the announcement in 1947 by Brewster [1] of the role of diphenhydramine hydrochloride (benadryl hydrochloride®) as a therapeutic agent in the treatment of the common cold, followed by subsequent releases by Brewster in 1949, antihistaminics have been widely employed in conditions of doubtful allergenic causation.[2] A review of the literature since the initial report on diphenhydramine by Loew and Kaiser [3] reveals only 4 cases of hematologic disorders associated with antihistaminic therapy, and these reports [4] have all been concerned with the agranulocytosis which follows treatment with this group of drugs. I believe that this report of 3 cases of anemia following antihistaminic therapy constitutes the first observation of such toxic hematologic side effects from this group of drugs.

REPORT OF CASES

CASE 1.—A Negro woman aged 28 was examined for the first time May 3, 1948, while she was in the midst of a severe attack of bronchial asthma, which had already lasted over twelve hours and for which she had already administered to herself several injections of epinephrine hydrochloride solution without obtaining relief. The patient had had asthma since the age of 14; it was much severer in the Autumn and Spring, and she usually recovered by "smoking asthma cigarets" and giving herself epinephrine injections. Physical examination showed symptoms which were attributable to long-standing bronchial asthma. The hemoglobin was 14.5 Gm. per hundred cubic centimeters (Sahli method); the red blood cell count was 4,850,000; the differential showed 5 per cent eosinophils. The urine was normal. The temperature was 100.5 F.

The patient was given 15 grains (0.97 Gm.) of aminophylline injection intravenously at once, and an intravenous infusion of 1,000 cc. of 5 per cent dextrose to which 150 mg. of diphenhydramine hydrochloride had been added was started. The patient soon began to show decided improvement of her symptoms. She was given a prescription for 50 mg. capsules of diphenhydramine hydrochloride with instructions to take one each morning and night, with additional capsules every four hours during the day if she felt that an attack was impending. She was told that she might have this prescription refilled at the drug store as often as she needed more of the capsules. The patient was given a second prescription for rectal suppositories, each of which contained 500 mg. of aminophylline and 100 mg. of pentobarbital. She was instructed to use these at bedtime and not to attempt to have this prescription refilled.

The patient was not seen again until March 9, 1949, about ten months after her initial treatment. At this time she stated that she had been receiving treatment for "anemia" by another physician since November 1948. She consulted this physician because of weakness, nervousness and inability to sleep at night; she was told that her symptoms were due to "lack of iron in the blood and anemia." Liver injections were prescribed, which she had been giving herself at weekly intervals (10 units each) and she was also taking 5 grain (0.32 Gm.) tablets of ferrous sulfate three times a day. The patient stated that she had been following this plan of therapy since December 1948 without apparent benefit.

Physical examination revealed no abnormalities; there was no jaundice or weight loss, and the patient did not appear chronically ill. Laboratory examination of the blood on this date (March 9, 1949) showed: hemoglobin 5.2 Gm. (Sahli method); red cell count 2,120,000; white cell count 10,200 with normal differential; platelet count 120,000; no increase in reticulocytes, and bleeding time 2 minutes (Duke's method). Examination of the smear showed no sickling either immediate or latent, and the red cell appeared normal in size and shape. Result of the fragility test of red cells was normal. The urine showed large amounts of urobilinogen (Schlesinger's method); likewise, the blood serum gave a strongly positive test for elevated serum bilirubin (Gmelin's test). Further blood studies showed: color index 0.8; hematocrit 18 per cent; volume index 0.88; the mean cell volume 85 cu. microns, and mean cell hemoglobin 25 micromicrograms. At this point it was evident that the patient had normochromic normocytic anemia of hemolytic nature.

The only drug that the patient was taking was diphenhydramine, which she admitted having taken rather consistently over the ten month period; she was requested to stop all medication and to return for follow-up studies of her blood. The results of these subsequent examinations are shown in table 1.

CASE 2.—A white woman aged 34 was examined initially on March 11, 1949. Her chief complaints at this time were fatigue, weakness and nervousness; she also stated that she had "anemia," having been told that she needed iron by a physician in December 1948. She had had hay fever "practically all of her life." The patient had never consulted a physician with regard to her hay fever, for one of her sisters also had hay

---

5. Chen, C. H.; Dienst, R. B., and Greenblatt, R. B.: The Treatment of Gonorrhea with Chloramphenicol, South. M. J. 42:986-988 (Nov.) 1949.

6. Robinson, H. M., and Robinson, H. M., Jr.: Studies on Chloramphenicol in Early Syphilis and Gonorrhea: Preliminary Report, South M. J. 42:988-991 (Nov.) 1949.

Student physician, Internal Medicine Section, the Graduate School of Medicine, University of Pennsylvania.

Dr. Max M. Stromia, assistant professor of pathology assigned to Internal Medicine, Graduate School of Medicine of the University of Pennsylvania, assisted in my preparation of this article.

1. Brewster, J. M.: Benadryl as Therapeutic Agent in the Treatment of the Common Cold, U. S. Nav. Med. Bull. 47:810 (Sept.-Oct.) 1947.

2. Brewster, J. M.: Antihistaminic Drugs in the Therapy of the Common Cold, U. S. Nav. Med. Bull. 49:1 (Jan.-Feb.) 1949; Treatment of the Common Cold with an Antihistaminic Drug, Illinois M. J. 96:302 (Nov.) 1949.

3. Loew, E. R., and Kaiser, M. E.: Alleviation of Anaphylactic Shock in Guinea Pigs with Synthetic Benzhydryl Alkamine Ethers, Proc. Soc. Exper. Biol. and Med. 58:235 (March) 1945.

4. Clement, R., and Godlewski, S.: Agranulocytose aiguë curable apparue au cours du traitment d'un asthme par un antihistaminique de synthèse, Bull. et mém. Soc. Méd. d. hôp. de Paris 61:103 (March 2) 1945. Blanton, W., and Owens, M.: Granulocytopenia Probably Due to Pyribenzamine, J. A. M. A. 134:454 (May 31) 1947. Cahan, A. M.; Meilman, E., and Jacobson, B. M.: Agranulocytosis Following Pyribenzamine, New England J. Med. 241:863 (Dec. 1) 1949. Drake, T. G.: Agranulocytosis During Therapy with the Antihistaminic Agent Methaphenilene (Diatrin), J. A. M. A. 142:477 (Feb. 18) 1950.

fever, and the patient generally took some of her sister's medicine when her own symptoms became unduly troublesome. When she was questioned specifically she stated that she had been taking 50 mg. tablets of tripelennamine hydrochloride (pyribenzamine hydrochloride®) since January 1948. (Her sister had given her the drug at first, but she now purchased it directly from the drug store.) She stated that she took at least three tablets a day and on some days five to six; she had found that her hay fever was better if she took the tablets every day instead of waiting until she had a severe exacerbation before beginning treatment. With regard to the anemia, the patient had had several injections of liver in December 1948 but had discontinued these though she was still taking her iron tablets (3 grains [0.19 Gm.] of ferrous sulfate) three times a day. Physical examination revealed pronounced paleness of the mucous membranes of the nose and throat; there was no jaundice, and the patient was apparently well nourished. Other than this the physical examination was noncontributory. A vaginal examination and a detailed menstrual history revealed no cause for any undue blood loss. Laboratory examination at this time showed: hemoglobin 8.5 Gm. per hundred cubic centimeters (Sahli method); red cell count 3,120,000; white cell count 9,800 per cubic millimeter, and normal differential. Stained smear showed red cells of normal size and shape. The erythrocyte fragility test gave a normal result. Further study revealed a mean cell volume of 77 cu. microns, a mean cell hemoglobin of 28 micromicrograms. The urinary examination showed large amounts of urobilinogen (Schlesinger's method).

TABLE 1.—*Follow-Up Studies of Blood in Case 1*

Date	Hemoglobin	Red Cell Count	White Cell Count	Urinary Urobilinogen	Reticulocytes	Serum Bilirubin
5/ 3/48	14.5 Gm.	4,850,000	14,500	...	...	...
3/ 9/48*	5.2 Gm.	2,120,000	10,200	4+	2%	4+
4/ 2/49	6.5 Gm.	2,330,000	9,800	2+	7%	2+
4/26/49	8.2 Gm.	3,100,000	.....	Absent	12%	None detectable
5/20/49	10.5 Gm.	3,800,000	.....	Absent	10%	None detectable
6/18/49	11.9 Gm.	4,100,000	.....	...	6%	...
7/28/49	13.2 Gm.	4,300,000	.....	...	5%	...
9/ 2/49	13.7 Gm.	4,420,000	.....	...	3%	...

* Diphenhydramine therapy stopped; patient had averaged 150 mg. of the drug per day over the preceding ten month period.

The serum bilirubin was decidedly elevated (Gmelin's test). In view of these observations it seemed certain that the patient's anemia was of hemolytic nature.

The only drug which the patient had been taking was tripelennamine, and she was requested to stop all medication; she was given a placebo and a prescription for ephedrine nose drops to help her rhinitis. She was told to return at regular intervals for follow-up blood studies, and these are shown in table 2.

CASE 3.—A white man aged 36, a carpenter, consulted me on May 27, 1949 with acute symptoms of hay fever. He was given a prescription for 50 mg. capsules of diphenhydramine hydrochloride; he was instructed to take the capsules as needed, not oftener than one every four hours. Unfortunately the blood was not examined at this time. The patient was not seen again until Aug. 3, 1949, when he had severe disabling headache of approximately thirty-six hours' duration. He stated that it was most unusual for him to have a headache as he had never had one previously except for several hours after an automobile wreck which had occurred many years ago. He had suffered an unusually severe exacerbation of his hay fever prior to the onset of this headache and had taken six capsules of diphenhydramine hydrochloride over a period of six hours; the headache had ensued shortly thereafter. The patient believed that perhaps the headache was due to the drug. Physical examination at this time revealed nothing abnormal. The laboratory examination showed: hemoglobin 9.2 Gm. (Sahli method); red cell count 3,700,000, and white cell count 7,500 with a normal differential cell count. A smear of the peripheral blood showed no abnormalities in the size or shape of the red cells. Urinary examination disclosed large amounts of urobilinogen (Schlesinger's method); the blood serum showed a decided increase in bilirubin (Gmelin's test). It was decided to discontinue diphenhydramine therapy immediately and to follow his blood picture. The headache was completely gone in twenty-four hours, and the patient's hematologic response showed a constant improvement (table 3).

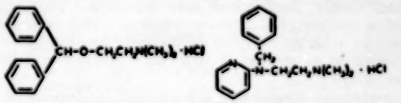
COMMENT

Diphenhydramine is a benzhydryl ether. It is thus chemically distinct from most of the other antihistaminic agents. Tripelennamine on the other hand is an ethylenediamine with a pyridine ring structure, and there are a number of other ethylenediamines which contain the pyridine ring structure and are members of the antihistaminic drug family. The ring does not have to be a pyridine, because a third group [5] of antihistaminic agents, although ethylenediamines, contain a phenyl ring instead of the pyridine.

TABLE 2.—*Follow-Up Studies of Blood in Case 2*

Date	Hemoglobin	Red Cell Count	White Cell Count	Urinary Urobilinogen	Reticulocytes	Serum Bilirubin
3/11/49*	8.5 Gm.	3,120,000	9,800	4+	3%	4+
5/16/49	9.5 Gm.	3,320,000	.....	Absent	9%	None detectable
6/21/49	10.7 Gm.	3,800,000	.....	...	11%	...
8/25/49	12.3 Gm.	4,110,000	.....	...	6%	...
9/26/49	13.9 Gm.	4,420,000	.....	...	3%	...

* Tripelennamine dosage stopped; no medicament given except placebo. The patient had averaged 150 mg. of the drug per day for preceding fifteen months.



Structural formulas of diphenhydramine hydrochloride and tripelennamine hydrochloride.

Apparently there has been little investigation of the absorption, excretion and fate of the antihistaminic drugs. It is known, however, that absorption from the gastrointestinal tract is rapid, since improvement in the patient's allergic phenomena occurs usually within the hour after administration of the drug.[5] Glazko and Dill in an experimental study of the fate of diphenhydramine in the rat, using a radioactive form of the drug, found the greatest concentration in the spleen, kidney and liver of the animal. They also found evidence suggesting that the liver of the rat was the primary source of an enzyme which destroys diphenhydramine.[6] It is regrettable that studies of liver and kidney function were not performed in these 3 patients for completeness, though there is no reason to believe that any of the 3 patients

TABLE 3.—*Follow-Up Studies of Blood in Case 3*

Date	Hemoglobin	Red Cell Count	White Cell Count	Urinary Urobilinogen	Reticulocytes	Serum Bilirubin
6/ 3/49*	9.2 Gm.	3,700,000	7,500	4+	6%	4+
8/26/49	10.5 Gm.	3,950,000	.....	Absent	11%	None detectable
9/15/49	11.2 Gm.	4,150,000	.....	...	10%	...
9/29/49	11.8 Gm.	4,350,000	.....	...	6%	...
12/29/49	14.2 Gm.	4,600,000	.....	...	2%	...

* Patient had been receiving diphenhydramine hydrochloride since May 27, 1949, or about eight weeks, and had averaged 150 mg. per day over this eight week period.

5. Loew, E. R.: Pharmacology of Antihistamine Compounds, Physiol. Rev. 27: 542, 1947.

6. Glazko, A. J., and Dill, W. A.: Biochemical Studies on Diphenhydramine, J. Biol. Chem. 179: 417, 1949.

might have had renal or hepatic dysfunction. There have been no reports of the cumulative effects of the antihistaminic drugs, but such cumulative action might explain the hemolysis seen in these 3 patients as a result of failure in the excretion or the inactivation of the drug given.

The first patient received an average of three 50 mg. capsules of diphenhydramine hydrochloride daily over a ten month period; she consulted a physician and was told that she had anemia some five months after the start of diphenhydramine therapy. After her condition was diagnosed as "anemia" this patient received injections of liver and intensive iron therapy without improvement. However, when all medication was discontinued the patient steadily improved, and her blood returned to normal after about five months of observation. The second patient, who had prescribed tripelennamine hydrochloride for herself, likewise had taken an average of three 50 mg. tablets daily for a period of ten months before her condition was diagnosed as "anemia." She had not received enough liver to obtain significant results therapeutically, but she had regularly taken 9 grains (0.58 Gm.) of ferrous sulfate a day for nearly three months without improvement. As soon as tripelennamine therapy was discontinued her blood picture steadily improved; within five months during which she took no medicament she was much improved. The third patient, who manifested a hemolytic process much earlier, might never have consulted a physician had it not been for a severe headache which occurred after he took an overdose of diphenhydramine hydrochloride in an attempt to abort an exacerbation of his hay fever.

Additional clinical data are needed [7] to demonstrate the true value and safety of these remedies. Loveless in 1947,[8] in her report on the side effects of diphenhydramine, was concerned with the immediate side effects of the drug, and studies were not reported of the possible side effects after its prolonged administration. In reports by Feinberg [9] in both 1946 and 1947 the toxic side effects of these drugs were discussed; this investigator did not believe that these drugs should be indiscriminately employed. In view of the facts that this group of drugs is being prescribed by the members of the medical profession for use by the patient over extended periods of time and that in many states these drugs are now being sold openly over the counter at drugstores for use in the self treatment of colds, I believe that these 3 cases of hemolytic anemia in association with antihistaminic therapy should be an added warning concerning the toxic side effects of the antihistaminic drugs.

SUMMARY

Three cases of hemolytic anemia associated with the administration of antihistaminic drugs are reported. In all 3 cases response to withdrawal of the drug was a return to normal of the blood picture. Since long term observations have not been made covering the possible delayed toxic effects of the antihistaminic agents, they should not be administered without adequate medical supervision.

388 Kelley Street.

7. Antihistaminics for Colds, editorial, J. A. M. A. 142: 370 (Feb. 25) 1950.
8. Loveless, M. H.: Therapeutic and Side Effects of Benadryl, Am. J. Med. 3: 296, 1947.
9. Feinberg, S. M.: Histamine and Antihistaminic Agents, J. A. M. A. 132: 702 (Nov. 23) 1946; The Antihistaminic Drugs, Am. J. Med. 3: 560 (Nov.) 1947.

FEBRILE CONVULSIONS IN CHILDREN

M. G. PETERMAN, M.D.
Milwaukee

For the purposes of this discussion a febrile convulsion is defined as a major seizure precipitated by a nonspecific fever of variable degree in a person with a potential convulsive disorder. The convulsion is always a major seizure. The degree of the inciting fever varies with each child and with other circumstances. The assumption of a potential convulsive disorder is based on the common knowledge among general practitioners that convulsions are not common in children and that when they occur it is usually in families which have a history of convulsions.[1] In 25,000 admissions to the Milwaukee Children's Hospital the incidence of convulsions was less than 2 per cent.[2] This figure is weighted by a large number of convulsive patients admitted for study. Therefore, when less than 2 children from 100 with similar complaints and, usually, fever respond with convulsions, it may be assumed that there is an intrinsic defect or abnormality in those 2.[3] Cases in which convulsions were caused by the direct infection or invasion of the central nervous system, such as encephalitis, meningitis and septicemia, are not included in this study.

There has been a recent tendency to minimize single, infantile or febrile convulsions. Livingston, Bridge and Kajdi studied 94 cases of febrile convulsions at the Johns Hopkins Hospital and followed them for fourteen years.[4] Electroencephalograms are not mentioned. In their series they report the prognosis for recovery as good in patients with febrile convulsions and better in those having fewer recurrences and those whose near relatives gave a similar history. Faxen [5] and Herlitz [6] have stated that the prognosis of febrile convulsions is good. However, Zellweger found that, of 105 cases of febrile convulsions, definite epilepsy developed in 15 and probable epilepsy in 6.[7] Osler in 1935 stated that 40 per cent of his epileptic patients gave a history of infantile convulsions.[8] Patrick and Levy concluded that infantile convulsions increased the patient's chances of having epilepsy five times,[9] and Thom calculated the chances are increased twelve times.[10]

Buchanan believes that ". . . the child who has had even one convulsion, and that associated with a high temperature, has by that token demonstrated that his cortex is less stable than that of his fellows. His threshold for discharge is lower than the accepted normal. . . . It is clinically true that from 15 to 20 per cent of children who have attacks associated with fever in childhood have spontaneous attacks later

This study was made possible by grants-in-aid from Eli Lilly & Company and Abbott Laboratories.
Read before the Section on Pediatrics, American Medical Association Clinical Session, Dec. 8, 1949, Washington, D. C.

1. Peterman, M. G.: Epilepsy in Childhood, Am. J. Dis. Child. 32: 416 (Sept.) 1926.
2. Peterman, M. G.: Convulsions in Childhood, Am. J. Dis. Child. 72: 399 (Oct.) 1946.
3. Peterman, M. G.: Convulsions in Childhood, J. A. M. A. 108: 1729 (May 26) 1934.
4. Livingston, S.; Bridge, E. M., and Kajdi, L.: J. Pediat. 31: 509 (Nov.) 1947.
5. Faxen, N.: Rev. franç. de pédiat. 11: 665, 1935.
6. Herlitz, C. W.: Acta paediat. (supp.) 29: 1, 1941.
7. Zellweger, H.: Helvet. paediat. acta, supp. 5, vol. 3, chap. 1, Basel, Benno Schwabe & Company, 1948.
8. Osler W.: The Principles and Practice of Medicine, ed. 12, New York, D. Appleton-Century Company, 1935.
9. Patrick, H. T., and Levy, D. M.: Early Convulsions in Epileptics and in Others, J. A. M. A. 98: 375 (Feb. 2) 1924.
10. Thom, D. A.: Am. J. Psychiat. 21: 574, 1942.

in life."[11] My experience leads me to agree with this conclusion.

Lennox agrees with this thesis in her statement that ". . . febrile convulsions differ as a disease from epilepsy only with respect to severity, but there is no real difference in kind."[12] However, in a review of her 77 cases in a recent paper, Lennox makes this statement, "Convulsions in children under 5 years of age are surprisingly frequent; they occur in 5 to 7 per cent of the normal population, and are attributable to fever in one half of the cases." She also repeats her earlier statement, "We do not wish to deny what is well known—that the great majority of children with febrile convulsions will have no further seizures during the rest of their life."[13]

It is my desire to reemphasize my earlier contention that every major convulsion is a serious, significant symptom worthy of careful, complete study and entitled to consideration as a possible onset of epilepsy. It is also my wish to correct a misinterpretation of my statistics. Several investigators have considered all the 835 cases of convulsions classified under "acute infection" as cases of febrile convulsions—this in spite of my statement: "It may be noted that in one third of the cases the cause of convulsions was due to or associated with acute infections. This includes generalized acute infections and the onset of the acute infectious diseases."[14] This distinction has been made throughout in my classifications.[15] My explanation has been that these convulsions, for the most part, represent the invasion of the central nervous system by bacteria or viruses, with a rise in temperature to the threshold level for that particular person. Therefore, the convulsion occurs simultaneously or before the fever. This is a most important point in diagnosis. In the febrile convulsions, as defined in my opening sentence, the fever occurs first, rises rapidly and precipitates the convulsion, but only in the child who has a potential convulsive tendency (less than 2 per cent of sick children admitted to a hospital).

This observation is in agreement with one made by Bridge at the Epilepsy Clinic in Baltimore. In his book Bridge says, "All of the 119 children in whom the initial seizure was associated with infection were diagnosed originally as having febrile convulsions. Yet, as time elapsed, it became clear that in them the correct diagnosis was epilepsy."[16]

In order to evaluate the recent reports minimizing the importance of febrile convulsions and to explain my classification, I reviewed the 3,000 cases of convulsions which I have seen in the past twenty-four years, most of which were seen in private practice. In my series I was able to select 128 cases from those classified under "acute infection" which might be designated as cases of febrile convulsions according to the definition given previously. Of these 128, 51 patients, or 40 per cent, had fever initially but continued to have convulsions without fever; 41 patients (31 per cent) had one convulsion with fever, and 36 patients (29 per cent) continued to have recurring convulsions only with fever.

11. Buchanan, D.: M. Clin. North America **30**: 163 (Jan.) 1946.
12. Lennox, M.: A. Research Nerv. & Ment. Dis., Proc. **26**: 342, 1947.
13. Lennox, M.: J. Pediat. **28**: 427 (Oct.) 1949.
14. Peterman, M. G.: Convulsions in Childhood: Study of Four Hundred and Nineteen Cases, J. A. M. A. **99**: 540 (Aug. 13) 1932.
15. Yannet, H., and others: Pediatrics **4**: 682 (Nov.) 1949.
16. Bridge, E. M.: Epilepsy and Convulsive Disorders in Children, New York, McGraw-Hill Book Company, 1949, p. 116.

Seventy-two, or 56 per cent of the patients were male and 56, or 44 per cent, female. The family history in siblings, parents and/or near relatives showed convulsions in 91 (71 per cent), of which 29 (22 per cent) were febrile (the accompanying table).

The most valuable diagnostic aid in this study has been the electroencephalogram. No study of convulsions is complete without this aid. In this series it was possible to make one or more electroencephalograms on 88 patients, or 68 per cent of the series. Of these, 76, or 86 per cent of those made, showed abnormalities indicating cerebral dysrhythmia or organic lesions. Twelve were normal. In 40 patients the electroencephalograms had not been obtained at the time of writing. Electroencephalograms on siblings of the patients showed abnormalities in 6 and normal conditions in 2, on the parents, abnormalities in 3 and normal conditions in 7. A larger series will have much greater significance. Many of these patients were seen before the electroencephalograph was available to me. Others could not be brought to my office for this study.

The birth history, or method of delivery, was normal in 64 patients, indicated probable brain injury in 27, had been by cesarean section in 6 and was not obtained in 31.

Forty-two of the patients had the first convulsion in the first year of life, 51 in the second year, 17

Family History of Convulsions

	No. with Convulsions	No. with Febrile Convulsions
Siblings	14	9
Parents	10	12
Near relatives	55	8
Total	91 (71%)	29 (29%)

between the second and third years, 10 between the third and fifth years and 8 between the fifth and tenth years. Thus, 73 per cent of the patients had the first convulsion in the first two years of life and 93 per cent before the fifth year. There were none after the tenth year.

Since this study has been in progress for about twenty-five years, many patients have been followed for a long time. This makes it possible, in a follow-up study, to establish certain diagnoses and correct or verify others. Therefore the final diagnoses, when they can be established, are of particular significance and importance. The final diagnoses were: febrile convulsions, no further distinction possible, in 49 patients, idiopathic epilepsy in 40, cerebral injury residue in 19 and miscellaneous in 20.

The results of treatment in this series with various anticonvulsant drugs, including phethenylate (thiantoin) sodium, gemonil (5,5-diethyl 1-methyl barbituric acid) and phenurone (phenacetylurea; alpha-phenyl acetourea) are as follows: complete control or freedom of seizures, 20 patients; improved control, 22 patients; no control, 12 patients, and unsatisfactory cooperation or treatment, 74 patients. Only those patients who had diagnostic changes, shown by the electroencephalogram, or more than one seizure per month were treated.

COMMENT

This study of the largest series of fever convulsions followed for the longest period of time and made with the aid of electroencephalographic studies represents a

cross section or survey of the convulsive state in children in Wisconsin. Convulsions are not common in the average general practice, but they are the most serious symptoms which can occur. The febrile convulsion or the major seizure which is precipitated by a rapid rise in body temperature to a threshold level which is peculiar to each person with a potential cerebral dysrhythmia is the least common of the convulsive disorders. Only 128 cases of febrile convulsions were found in 3,000 cases of convulsive disorders. A diagnostic distinction is made between febrile convulsions in which the fever precedes and precipitates the convulsion and the fevers of infectious origin in which the convulsion may accompany or follow the invasion of the central nervous system, with a subsequent rise in body temperature.

This series of cases demonstrates that the child who has febrile convulsions, or even only one convulsion, usually has a serious disorder of the nervous system, with a 15 per cent chance of complete control under treatment, a 17 per cent chance of good control and a 9 per cent chance of no response to treatment. The majority, 86 per cent, of patients have their first febrile convulsion before the age of 3 years.

The high incidence (71 per cent) of convulsions in the family or among the near relatives of these patients indicates that the convulsive disorder or state is inherited. This evidence coincides with the subsequent development of epilepsy in 31 per cent. It is possible that further study, particularly with electroencephalography, would reveal cerebral dysrhythmia in many of the 38 per cent with the unsatisfactory or incomplete diagnosis of febrile convulsions. The electroencephalographic observations will not be detailed here because the study is still in its early development and the observations are controversial in nature.

CONCLUSIONS

A febrile convulsion may be distinguished from the other convulsions associated with acute infection by the arbitrary definition of a major seizure associated with a rapid rise in temperature to a certain level, specific for each child, with a convulsive disorder. The fever usually precedes and precipitates the seizure.

Every convulsion in childhood demands a thorough study, including an electroencephalogram and an attempt to make a diagnosis. This is necessary as a guide for treatment, particularly today, with the new drugs available.

The high percentage of family histories of convulsions, electroencephalograms showing abnormalities and subsequent development of epilepsy indicates that the convulsive disorder is inherited.

The immediate treatment in the febrile convulsion must be the reduction of the fever. However, the next problem, of equal importance and urgency, is the establishment of the diagnosis, as the basis for further treatment and prevention of recurrence. After that the drugs of choice are phenobarbital, phethenylate, gemonil (5,5-diethyl 1-methyl barbituric acid), phenurone (phenacetylurea; alpha-phenyl acetourea) and diphenylhydantoin sodium, depending on the diagnosis. The treatment must be continued for at least one year after the last convulsion and after the electroencephalogram becomes normal.

411 East Mason Street

EMPIRIC RISK FIGURES IN MONGOLISM

J. A. BÖÖK, M.D.
and
S. C. REED, Ph.D.
Minneapolis

Knowledge of the etiology of mongolism is still deficient. The main point of controversy seems to be whether genetic factors have any significance. Penrose [1] and Hanhart [2] are of the opinion that they do. Benda [3] denies that heredity has anything to do with mongolism. We are of the opinion that genotypic factors, inherent in the embryo, play some yet obscure part in the etiology. Whatever may be the etiologic background of this condition, it is possible to calculate empiric risk figures, in the sense elaborated by the Rüdin school in Germany, which may be useful in counseling.

FREQUENCY OF MONGOLISM

In the Population.—The frequency of mongolism among newborn infants is not exactly known. Penrose [1] gives an estimation of 1:600 births. Doxiades and Portius [4] estimate the frequency in Northern Germany and Berlin at about 1:7,000. This figure, however, accounts only for patients admitted to institutions or otherwise known to public health organizations. It may therefore be considered to be too low. Furthermore, it must be taken into consideration that mongoloid babies have a low resistance to infections and a higher rate of mortality during infancy and childhood. The frequency of mongolism will therefore vary inversely with the age group taken into consideration.

TABLE 1.—*Frequency of Mongolism According to Age Groups in a North Swedish Population*

	Age of Child				
	0-5	5-10	10-15	15-20	Total
Mongoloid children	2	6	1	1	10
Population	1,285	1,200	1,065	786	4,336
Rate	1:643	1:210	1:1,065	1:786	1:435

One of us (J.A.B.)[5] recently, during extensive field work, personally examined all patients with severe mental deficiency (idiocy, imbecility and all known clinical types of feeblemindedness, without respect to the degree of mental impairment), psychoses and convulsive disorders in a relatively isolated North Swedish population of 8,651 persons (figure of 1945). So far a conclusive diagnosis of mongolism has been made in 10 cases. Referred to the total population this gives a frequency of about 1:1,000. The important figure, however, is the morbidity risk, by which we mean the proportion of newborn infants who will be mongoloid. In calculating the morbidity risk figure the raised mortality in mongolism must be taken into consideration. Few persons with mongolism will survive more than 25 years. In the present material the oldest patient

From the Dight Institute for Human Genetics, University of Minnesota, Minneapolis.

Special research fellow of the United States Public Health Service, 1950-1951 (Dr. Böök).

1. Penrose, L. S.: Some Genetic Problems in Mental Deficiency, J. Ment. Sc. **84**:693, 1938.

2. Hanhart, E.: Neue familiäre Fälle von mongoloidem Schwachsinn als Beweis für die Mitwirkung von Erbfaktoren, Arch. d. Julius Klaus-Stiftg. f. Vererbaforschg. **19**:349, 1944.

3. Benda, C. E.: Mongolism and Cretinism, New York, Grune & Stratton, Inc., 1949, 316 pp.

4. Doxiades, L., and Portius, W.: Zur Ätiologie des Mongolismus unter besonderer Berücksichtigung der Sippenbefunde, Ztschr. f. menschl. Vererb- u. Konstitutionslehre **28**:384, 1938.

5. Böök, J. A.: Clinical and Genetical Studies in a North Swedish Population, unpublished data.

was 16 years of age. The frequency of mongolism according to the different age groups is given in table 1. In the youngest age group we assume that a number of cases have been missed. Some patients may have died of congenital heart disease without their mongoloid condition being recognized, and some cases simply may not have been discovered. In the other groups, however, the material may be considered complete, as every case will inevitably be recognized when the child reaches school age. Therefore the frequency of mongolism in the age group of 5 to 10 years will probably give the best estimation. In this group most persons with mongolism will still be alive. The present material is small and evidently has a considerable statistical error, but, if the actual frequency or morbidity risk is calculated on the basis of the total population between birth and 20 years of age, the figure of about 1:400 is reached. It is possible that the frequency of mongolism is different in different populations, but for practical purposes it may be assumed that the true value lies somewhere between 1:500 and 1:1,500 newborn, probably closer to 1:500.

Among Siblings of Persons with Mongolism.—Penrose [6] gives a table from which it can be calculated that, among 814 siblings of 217 persons with mongolism, 7 were mongoloid. This gives a frequency of 0.85 per cent. Penrose [7] reported 63 persons with mongolism, with a total of 271 siblings, of which 4 were affected. This is a frequency of 1.47 per cent. If the mongoloid children had been evenly distributed according to the different birth ranks, the correct inheritance risk figure would have been about 1 per cent. However, the birth rank distribution shows an excess of mongolism in the higher ranks, and this must be taken into consideration. What physicians actually want to know for counseling is not the frequency of mongolism among all siblings but the risk figure for children born after the appearance of the first mongoloid child in the family. This risk may be estimated from a recalculation of the appendix table in Penrose's paper.[7] Among a total number of 153 children born alive subsequent to the first mongoloid child, 6 were mongoloid. This gives an empiric risk figure of 3.9 per cent.

A woman who has borne a mongoloid child and asks her physician what may be the risk of having another child similarly affected therefore should have the answer that the chance is about 1:25. She will take a risk which is actually 20 to 60 times greater than if no mongoloid child had been born in her family. As a general rule the counselor in clinical genetics should explain the situation carefully to the mother (most of them find it hard to understand what is meant by statistical chance) and leave the decision concerning further pregnancies to her. Furthermore, it seems important to point out that risk figures of this kind should not be used in such a way as to frighten the patient. On the contrary, as many patients believe that the outlook is much worse than it actually is, they may rather be reassured by getting a proper explanation. By giving the patient the correct answer instead of dismissing the problem by saying there is no risk, the physician may avoid an embarrassing situation if a patient should return with another mongoloid baby. That may happen in 1 case in 25.

RISK FIGURES AND AGE OF MOTHER

Benda [8] states that 12.5 per cent of all children born to women over the age of 44 will be mongoloid. On this point he quoted Bennholdt-Thomsen,[8] who reported 36 cases of mongolism. In 5 cases the mother was over 44 at the time the mongoloid baby was born. These cases were collected during a period of 10 years in the University Pediatric Clinic in Munich. The next step was to calculate the age distribution of mothers of non-mongoloid children. This distribution was based on the ages of the mothers of all children first admitted to the same clinic in one year. Among 935 mothers 4 were over the age of 44. Assuming the same distribution over a ten year period, the frequency of mothers over 44 with mongoloid children among all mothers over 44 would be 5:40, or 12.5 per cent. Bennholdt-Thomsen, who, however, qualifies himself by saying, "*. . . da zeigt sich, dass der prozentuale Anteil der Mongolenmütter unter den Frauen von 40 oder mehr Jahren ein eminenter ist,*" and Benda,[9] who quotes him, apparently did not realize that the material is heavily biased and does not permit a general conclusion. Thus

TABLE 2.—*Maternal Age Factor in Mongolism According to Benda [8] and Malzberg [9]*

Age of Mother	No. of Mongoloid Children			
	Benda	Malzberg	Total	Percentage
Under 20	4	22	26	2.4
20-24	26	97	123	11.6
25-29	29	131	160	15.1
30-34	48	148	196	18.5
35-39	84	216	300	28.2
40-44	56	167	223	21.0
45 and over	8	26	34	3.2
Total	255	807	1,062	100.0

when Benda states: "But among 100 pregnant women of 45 to 47, more than 12 will have a mongoloid child, and if the age approaches 50, the number of pathological pregnancies will reach a percentage of more than 25," the data have been used in an illegitimate fashion. For one thing the material is small, but, more important, the only conclusion that is valid in this case is that among those mothers who in the years 1920 to 1929 brought their children to the Pediatric Clinic in Munich and were over 44 years of age 12.5 per cent had a mongoloid child. That a number of mothers over the age of 44 in the population from which the mongoloid children were drawn had no particular reason to visit the clinic evidently has escaped both authors. However, there remains no doubt that maternal age is an important factor in the etiology of mongolism. There is a general increase of risk with advanced age, and it seems important to arrive at a reasonable estimate. This can be achieved as follows.

As basic material for our calculation we have used two series of mongolism reported by Benda [8] and Malzberg.[9] These give a total of 1,062 cases. The age distribution of the mothers is shown in table 2. With the total number of live births in the state of New York during 1946 and with the actual age distribution

6. Penrose, L. S.: A Method of Separating the Relative Aetiological Effects of Birth Order and Maternal Age in Mongolism, Ann. Eugenics **9**: 108, 1934.

7. Penrose, L. S.: Maternal Age, Order of Birth and Developmental Abnormalities, J. Ment. Sc. **85**: 1141, 1939.

8. Bennholdt-Thomsen, C.: Ueber den Mongolismus und andere angeborene Abartungen in ihrer Beziehung zu hohem Alter der Mütter, Ztschr. f. Kinderh. **53**: 427, 1932.

9. Malzberg, B.: Some Statistical Aspects of Mongolism, Am. J. Ment. Deficiency **54**: 265, 1953.

of the mothers, the expected number of mongoloid children in each age group was calculated for the assumed frequencies of mongolism in the population at 1:500, 1:1,000 and 1:1,500 (table 3). After that the risk figure for each age group can easily be calculated (table 4).

It will be seen that, if the frequency of mongolism is assumed to be 1:500, the statistical risk figure for women over 44 years of age will be about 6 per cent and correspondingly less with a lower frequency in the population. It should be stressed that the risk figures are purely empiric and do not imply any particular theory about the etiology of mongolism, hereditary or environmental.

From a practical point of view the following prognosis may be given. A woman who already has a mongoloid child runs a statistical chance of about 4 per cent of having another mongoloid child. If the parents want another child they should be told that the younger

TABLE 3.—*Live Births Among the White Population of New York State During 1946, According to Age of Mother and Expected Number of Children with Mongolism*

Age of Mother	No. Live Births	Expected No. of Mongoloid Children if the Frequency of Mongolism in the Population Is:		
		1:500	1:1,000	1:1,500
Under 20	11,347	23	6	4
20-24	72,215	62	31	22
25-29	86,711	81	41	28
30-34	61,685	100	50	35
35-39	28,857	152	76	53
40-44	5,749	113	56	40
45 and over	380	17	9	6
Total	268,947	538	269	188

TABLE 4.—*Percentage Risk Figure of the Incidence of Mongoloid Children for Mothers of Different Ages*

Sample Frequencies of Mongolism in the General Population	Age of Mother						
	Under 20	20-24	25-29	30-34	35-39	40-44	45 and over
1:500	0.21	0.09	0.09	0.16	0.54	1.97	6.01
1:1,000	0.05	0.04	0.05	0.10	0.26	0.97	3.18
1:1,500	0.04	0.03	0.05	0.06	0.18	0.70	2.12

the woman is during the next pregnancy, the better prognosis can be given. Any woman who becomes pregnant after she is 40 runs a statistical chance of about 1 to 6 per cent of having a mongoloid child. This is perhaps not so important from the point of view of counseling, as any physician will advise a woman to have her children before she is 35, but it adds to this general rule. However, the consideration of these facts may become more important if the present tendency to postpone childbearing increases in the "civilized" communities.

SUMMARY

The empiric risk figures for mongolism may be summarized as follows:

1. A woman who has borne a mongoloid child runs a statistical chance of about 4 per cent of having the next pregnancy result in the birth of another mongoloid child. This implies a 40 times greater risk than the average at all ages.

2. Any woman who becomes pregnant after she is 40 runs a statistical chance of about 1 to 6 per cent (table 4) of having a mongoloid child.

3. The frequency of mongolism in the general population is estimated to lie somewhat between 1:500 and 1:1,500.

STUTTERING—THE PROBLEM TODAY

ISAAC W. KARLIN, M.D.
Brooklyn

Stuttering has been recognized as a speech disorder from time immemorial. Moses is said to have been a stutterer. In spite of this there are only a few basic facts known about the disorder. Stuttering is not limited to nor is it more common in certain levels of society. It afflicts the rich and the poor, the great and the near great, the statesman, the professional man, the scientist and the laborer. It occurs in about 1 to 2 per cent of the population. It is more common in boys than in girls, the proportion being approximately 4 to 1, and its tendency to persist is more common among boys. The condition always begins in early childhood and oddly enough occurs during those years when the child's articulation as a whole tends to improve and become more distinct.

Stuttering may be defined as the disturbance in the rhythm of speech characterized by intermittent or irregular spasmodic blocking or repetition of sounds and words. The symptomatology of stuttering can best be understood if it is borne in mind that speech is the medium of social contact and the means of expressing thoughts, feelings and ideas. It is now recognized that even in disorders of definite organic etiology there are emotional factors that play a role in the symptom complex. Goldstein [1] referred to this as the organismic approach. He stated that not all deviations of behavior are directly related to the underlying defect but some are the expressions of protective mechanisms which the organism utilizes against the disastrous consequence of the defect. Stuttering, as it unfolds itself from its early onset, is an outstanding example of a disorder wherein the emotional factors gradually play a greater and greater part and, finally, assume a dominant role.

DEVELOPMENT OF SYMPTOMS

At the onset, the child of about 3 or 4 may begin to repeat words or sounds. He may show only an occasional slight hesitation in his speech and while speaking may stop suddenly as if groping for a word. A great deal has been said in recent literature to show that these early repetitions of the stutterer are in no way different from the repetitions often heard in nonstuttering children of the same age group. This is true, but the same is true of headache as a symptom, which may be due to temper tantrums or may indicate the beginning of a brain tumor. In many cases a period of observation may be required before a definite diagnosis is made. The normal or physiologic period of hesitancy or repetition of words is of relatively short duration but will last longer in the child who is a stutterer. Van Riper [2] pointed out that the nonstuttering child repeats words and phrases while the young stutterer's speech has a much greater proportion of syllable repetition. The normal child will say, "Mother, Mother, may I have, may I have . . .?" The young stutterer will say, "Muh-muh-mother, may I-I-I have . . .?" Within a few weeks or months, as the child's vocabulary increases, a certain amount of tenseness will become apparent in his repetition of words

From the Speech Clinic, Pediatric Department, Jewish Hospital of Brooklyn.

1. Goldstein, K.: Language and Language Disturbances: Aphasic Symptom Complexes and Their Significance for Medicine and Theory of Language, New York, Grune & Stratton, Inc., 1948.
2. Van Riper, C.: Speech Correction: Principles and Methods, Prentice-Hall Speech and Drama Series, ed. 2, New York, Prentice-Hall, Inc., 1947.

or sounds. This is due to the spasmodic contractions of the muscles concerned with speech such as those of the lips, tongue, jaw or larynx. The spasm may be tonic, the parts involved remaining tense or showing only a slight quiver until the sound is forced through. In other cases the spasm is clonic, producing explosive repetition of the same sounds.

As the stuttering becomes more definite, the parents may become concerned. Often an outsider may call the mother's attention to the child's difficulty. A playmate may mimic him. The mother may now tell the child, "Speak clearly. Say it over again," or, "Talk slowly. Think before you speak." The child now becomes conscious of his speech difficulty, and as a result a cardinal psychologic symptom makes its appearance. He begins for the first time to show anxiety when he talks. He may put his hand to his mouth when he begins to stutter, or he may turn his head away from the person to whom he is speaking. His face may take on a questioning appearance when he turns to his mother in order to ascertain the reaction she exhibits toward his speech. He will begin to show tensions and spasmodic movements in other parts of the body. Twitching of the eyes, jerking movements of the head, contortions of the face, clenching of fists and stamping of feet may appear singly or in various combinations. The synchronous activity of the respiratory muscles may become disrupted. During these spasms the stutterer frequently tries to speak on inspiration, the attempt resulting in short inspiratory gasping movements until, apparently exhausted, he forces out the word on expiration. At times he may give the momentary impression of undergoing a convulsive seizure.

The next stage in this picture is the school child between 6 and 12 years of age. In addition to the stuttering and moderate anxiety, mild difficulties in personality adjustment gradually develop. The child's anxiety becomes more pronounced, and in addition he begins to experience a specific fear of talking. In the classroom he will hold himself back from raising his hand to ask questions. He refuses to go on errands. The teacher, not to embarrass him, calls on him less frequently. He is not given any part in plays. He becomes sensitive to ridicule and may resent correction. The resultant loss of confidence and security in speech situations may gradually lower his self esteem. Should stuttering appear in the course of a conversation, he would rather stop talking instead of completing the sentence.

Outside of these immediate speech situations, the average child of this period of life has many absorbing interests and activities. Phantasy, at this period of his life, is an important part of his developing personality. As a result of this he usually reacts to his speech difficulty with more or less indifference. The stuttering school child does not reveal outstanding emotional or behavior problems different in degree or kind from those of the nonstutterer. He does not feel himself greatly handicapped. One may call this a latent period in the emotional influence of stuttering on his personality.

The adolescent or the young adult presents the classic picture. Stuttering is severe, anxiety is pronounced and there is fear of speech with resultant difficulties in personality and adjustment. The speech defect becomes a dominant factor in his language function. He may become less sociable and more introverted. He may acquire a tendency to shyness, and usually a sense of inferiority develops. Eventually, he may indulge in self pity and may use his speech difficulty to rationalize all his shortcomings and failures. The pattern of stuttering may be so ingrained in his personality that it becomes his distinctive badge. He may actually be surprised if he manages to say a few sentences well. The stuttering has become a part of him. He will experience invisible stuttering. He may think of a sentence he would like to say and he will actually feel that a certain word will give him difficulty if he were to say it. Other concomitant invisible signs that he may experience before talking are the feelings of tension in the chest and throat, flushing of face, palpitation and sweating of the hands, and the entire body may assume a set posture as if facing danger.

This is the picture of a stutterer who has carried his difficulty with him since early childhood. He represents, more or less, the climactic end result of various emotional complexes which he had built up in an effort to adjust himself to a difficulty which has great social implications.

Basically, however, his personality as a whole is just as varied as that of the nonstutterer. He has the capacity to lead a normal life by adjusting himself to his difficulty. He is self sufficient. Stutterers are found among physicians, dentists, teachers, lawyers, clerks, musicians, preachers, laborers, kings and statesmen. They marry, raise families and have just as many or just as little marital problems as nonstutterers. Some stutterers will say they could have done better in some other endeavor of life if it were not for their difficulty, but there are just as many nonstutterers who believe that they were really destined to do something "better" than what they are actually doing.

The adult stutterer presents a much more subdued picture. He has matured physically and emotionally. By trial and error, a pattern of speech has developed which has a minimum of stuttering; he has learned to live with his difficulty. There are more child stutterers than adult stutterers. Some outgrow their difficulty, and some continue to stutter badly, while many an adult stutters only occasionally, as under stress or emotional excitement and in normal conditions speaks well.

LABORATORY FINDINGS

Biochemical studies have not revealed significant differences between stutterers and nonstutterers. Results have been within the normal range.[3] It is of interest, however, that statistically it was found that there is a difference, perhaps significant, in potassium values. Stutterers have a lower potassium value than normal persons. There are a number of observations that suggest that potassium ions may play some part in the transmission of the nerve impulse in autonomic ganglions. A dose of potassium, insufficient to act alone, enhances the response of ganglion cells to preganglionic stimulation and to the action of acetylcholine.

Electroencephalographic and laterality studies of stutterers and nonstutterers did not reveal conclusive results. Investigations by Rheinberger, Berman and me[4] led us to state in the summary that comparisons of the laterality tendencies and the electroencephalographic patterns of 10 stuttering and 10 nonstuttering boys disclosed an essential similarity between the two groups. It may be noted, however, that in our laterality

3. Karlin, I. W., and Sobel, A. E.: A Comparative Study of the Blood Chemistry of Stutterers and Non-Stutterers, Speech Monogr. **7**: 75, 1940.

4. Rheinberger, M. B.; Karlin, I. W., and Berman, A. B.: Electroencephalographic and Laterality Studies of Stuttering and Non-Stuttering Children, Nerv. Child **2**: 117, 1943.

studies there were differences sufficient to suggest that the stutterers had somewhat less unilaterality than did the nonstutterers. Also, in the electroencephalographic studies it was noted that children with severe stutter and/or no improvement in speech showed a greater incidence of positive response to hyperventilation than those whose defect was less severe (83 per cent against 50 per cent). It must be emphasized that similar trends were noted in children showing asocial behavior and family history of allergy.

Endocrine disorders may play a role in distorted speech,[5] and, while there is no evidence at present, they may also have a part in stuttering.

ETIOLOGY

There is no definite knowledge of the cause of stuttering. There are several theories that have valid reasoning, but none of them stand up under critical analysis. The interest in the study of speech and speech disorders (except aphasia) and the progress made in this field are mainly due to the educator and the psychologist. Probably because of the type of training and later work, a theory of stuttering propounded by the educator may appear to be greatly different from a theory propounded by the physician. A closer analysis, however, will reveal that perhaps the difference is mainly that of emphasis and that there is a common denominator among the various points of view. One has to be eclectic in his approach to this problem.

The earlier theories regarded stuttering as due to some abnormality of the peripheral organs of speech, such as the mouth, throat or tongue. No one today accepts or considers these theories. To direct the stutterer's attention to his throat or mouth may only accentuate his preoccupation with the visible external structures and fix in his mind the idea that they are the seat of his trouble.

The principal current theories concerning stuttering are as follows:

1. Stuttering is a functional disorder and is considered a psychoneurosis, a personality disorder or an index of social maladjustment. The psychoanalytic school refers to stuttering as an oral neurosis in which the libido becomes fixed at the oral erotic stage of development.[6] Others regard stuttering as an anxiety neurosis,[7] or as due to a lack of integration of the personality of the stutterer,[8] or to an inabiilty to adjust socially.[9] In brief, stuttering, according to these theories, is an outward expression of an underlying emotional maladjustment. The outstanding emotional characteristics are fear, anxiety and asocial behavior.

However, any type of abnormality, such as stuttering, will cause the emergence of certain compensatory mechanisms which will color, to a greater or lesser extent, the daily activities of an otherwise normal person. One may well assume that the emotional characteristics of the stutterer, instead of being the cause of this stuttering, are actually the result of his adjustment to a difficulty which has great social implications.

2. Stuttering is a habit[10] or a behavior that is learned.[11] Johnson[12] elaborated this theory, and he referred to stuttering as a "diagnosogenic" and a "semantogenic" disorder. According to this theory, it is the parent's diagnosis and their attitude toward the child's speech that are the principal factors in the cause of the disorder. Johnson identified the early repetitions of the child stutterer with the repetitions that many normal children have. It is when the parents diagnose the repetitions as stuttering, are concerned about them and begin to correct and advise the child that stuttering results. According to this theory, stuttering is due to a faulty diagnosis in a semantic environment. While the theory that stuttering is a psychoneurosis places the emphasis on the child, the diagnosogenic theory shifts the emphasis to the parent.

It would appear from this theory that there is no such entity as stuttering until the parents make the faulty diagnosis and begin to be concerned about the child's hesitations and repetitions. It is well to remember that the majority of mothers do not make a diagnosis and begin to be concerned about the child's speech until it appears to be different from the average speech of a child at the same age level. The difference, for a time, may be only in degree but not in kind. By and large, by the time the parents diagnose and begin to be concerned about the child's speech he has already been stuttering a long time. It is a fact that 1 per cent of the population are stutterers. Is it that the parents of this 1 per cent of children are so different from the parents of the 99 per cent who do not start stuttering? How does this theory explain that there are 4 or 5 boy stutterers to every girl stutterer? This theory is simple and plausible, but does it really explain such a deep-seated, malignant disorder as stuttering? Not only, according to this theory, is the faulty diagnosis by the parents of the child's speech the basis for his stuttering but also, according to Brown,[13] who accepts this theory, failure in the treatment of stuttering almost always occurs when the parents are unwilling or unable to accept the explanation given them by the therapist. No one can minimize the importance of parental attitudes in the treatment of stuttering. At the present stage of our knowledge, however, the clinician must assume some, if not the major, share of responsibility for failure to achieve results.

3. Stuttering is basically an organic disorder of the language function. Orton[14] and Travis[15] have advanced the theory of cerebral dominance. Stuttering is considered mainly to be the result of a conflict between the two cerebral hemispheres, caused by the lack of development of a dominant gradient. Stuttering, according to this theory, is related to left-handedness in that normally left-handed children who are forced to use their right hand may acquire a stutter because of the lack of development of the dominant hemisphere.

I have proposed a psychosomatic theory,[16] according to which the basis for stuttering is a delay or a slower

5. Karlin, I. W.; Youtz, A. C., and Kennedy, L.: Distorted Speech in Young Children, Am. J. Dis. Child. **59**: 1203 (June) 1940.

6. Coriat, I. M.: Stammering: A Psychoanalytic Interpretation, Nervous and Mental Disease Monograph 47, New York, Nervous and Mental Disease Publishing Company, 1928.

7. Appelt, A.: The Real Cause of Stammering and Its Permanent Cure, London, Methuen, & Co., 1911.

8. Greene, J. S.: The Stutter-Type Personality, New York State J. Med. **36**: 752, 1936.

9. Fletcher, J. M.: The Problem of Stuttering: A Diagnosis and a Plan of Treatment, New York, Longmans, Green & Company, 1928.

10. McDowell, E.: Educational and Emotional Adjustments of Stuttering Children, Contributions to Education no. 314, Teachers College, Columbia University, New York, 1928, p. 1.

11. Johnson, W., and others: A Study of the Onset and Development of Stuttering, J. Speech Disorders **7**: 251, 1942.

12. Johnson, W.: People in Quandaries: The Semantics of Personal Adjustment, New York, Harper & Brothers, 1946.

13. Brown, S. W.: Advising Parents of Early Stutterers, Pediatrics **4**: 170, 1949.

14. Orton, S. T.: Reading, Writing, and Speech Problems in Children: A Presentation of Certain Types of Disorders in the Development of the Language Faculty, New York, W. W. Nortin & Company, Inc., 1937.

15. Travis, L. E.: Speech Pathology: A Dynamic Neurological Treatment of Normal Speech and Speech Deviations, New York, D. Appleton and Company, 1931.

16. Karlin, I. W.: A Psychosomatic Theory of Stuttering, J. Speech Disorders **12**: 319, 1947.

progress of myelinization of the cortical areas concerned with speech.

In conformity with biologic laws, function appears only when the structures that perform that function become mature. Myelinization is regarded as correlated with function. For instance, an infant begins to maintain equilibrium and perform coordinated movements such as crawling and standing only when certain tracts begin to myelinate. The most precise and most completely coordinated reactions are those which involve mainly conduction pathways which become myelinated early.[17] A nerve fiber that has not been completely myelinated may transmit impulses, but the resulting action will lack precision and fine coordination. The myelinization of the speech areas in the brain is a comparatively late process in cortical development.

On the psychologic side of development, it is recognized that at about the age of 3 the child enters a period of resistance and negativism.[18] He discovers that he has a world of his own, and at the same time he has a feeling of anxiety and inner insecurity. The parents may have difficulty with his management.

The psychosomatic theory regards stuttering as due to a combination of organic and psychologic factors occurring at approximately the same time. The primary basic factor is a delay in myelinization of the cortical speech areas. The secondary factor enters the picture when a child of 3 or 4 years of age having a delay in myelinization is exposed to undue emotional stress during this negativistic period. This emotional stress will act as a catalytic agent in producing stuttering. If judiciously managed and if the emotional stress is lessened, the speech will improve as myelinization progresses and as the ability to perform the fine coordinated movements necessary for speech becomes fully established.

The major criticism of this theory is that there is no anatomic proof for it. The theory, however, that stuttering is basically due to a retarded process of myelinization will explain most of the basic facts about stuttering. Stuttering occurs more often in boys because myelinization begins earlier in girls.[19] By the time the girl is 3 or 4 the myelinization of her speech areas in the brain is apt to be more advanced than that in the boy. Myelinization may not be complete until 20 years of age, and this may be the reason why some stutterers outgrow their difficulty as they grow older and more mature.

That stuttering is basically an organic disorder is supported by the fact that it has a familial tendency. Davenport,[20] in discussing nervous diseases which have a genetic basis, stated that stuttering has been shown by Bryant, Estabrook and others to recur in strikingly high incidence in particular families.

PROGNOSIS

The time-honored advice given by the physician, who is usually the first one that the mother consults, is: "Ignore him. Every child repeats; he will outgrow it." But do they all outgrow it? There are children of 3 or 4 years of age who begin to show the early signs of stuttering. The parents are concerned and talk about the condition, but in a relatively short time, with no therapy, the children go on to normal speech. Then there are the children who begin to show the same mild symptoms as the previous group but soon show definite stuttering. The parents may come for advice and, with therapy at times minimal or without it, the children stop stuttering within a few months or possibly a year and their speech becomes fluent. These two groups comprise about 50 per cent of the children affected by stuttering. The other 50 per cent are those who begin to stutter just as the other group did but whose stuttering continues. They form the 1 to 2 per cent of the population who stutter.

Within this last group, the greatest majority of parents, perhaps 90 per cent of them, take the advice of the physician or neighbor and either ignore the defect completely or employ the usual lay methods. Their children become full stutterers, with all its symptoms and complexes. The remaining 10 per cent of the children in the last group receive what is believed today to be competent help. In spite of this and in spite of the good cooperation of the parents, they continue stuttering into adult life.

There are no tests today by which one can tell which child who begins unduly to hesitate or to repeat words or sentences will start stuttering and which child will have normal speech. The diagnosis of stuttering can be made only when the child stutters when he talks. The rule should be that every child of 3 to 4 years of age who begins to hesitate and repeats words and sentences sufficiently to be noticed should be treated as early as possible. The hope is to rescue some of the children who receive no therapy at all.

TREATMENT

The infant hears many sounds around him which at first are without significance. He soon learns that certain sounds or words are associated with certain experiences, and these in turn acquire an emotional tone. It must be remembered that the young child's life is richly emotional, that he does not acquire all the speech sounds simultaneously but that there is a definite order of progression in the development of speech sounds[21] and finally that the development of speech does not proceed at the same rate in every child.[22]

The basis for the treatment of stuttering of the preschool child is to allow further maturation of the cortical speech areas, so that maximum stability and neuromuscular coordination in the function of speech develop, and at the same time to try to hold to a minimum the emotional factors which complicate and accentuate the disorder.

The mother coming to the physician with a child who stutters has already read or heard some of the modern concepts about stuttering. She believes that something she has done or said or some earlier disturbed family relationship has caused the difficulty. She may not even remember when the child first began to stutter, and she is positive that no one paid attention to his speech until stuttering became definite; still she believes that she or the father is to blame. She is dominated by the feeling of guilt, as a result of which she becomes uncertain in the handling of the child. The child senses this uncertainty, and it gives him a feeling of uneasiness and frustration. The parents,

17. Kuntz, A.: A Text-Book of Neuro-Anatomy, ed. 3, Philadelphia, Lea & Febiger, 1942.

18. Brennemann, J.: Practice of Pediatrics, Hagerstown, Md., W. F. Prior Company, Inc., 1945, vol. 4.

19. Flechsig, P.: Meine myelogenetische Hirnlehre, mit biographischer Einleitung, Berlin, Julius Springer, 1927.

20. Davenport, C. E.: Heredity and Eugenics in Relation to Medicine, The Oxford Medicine 1: 519, 1934.

21. West, R.; Kennedy, L., and Carr, A.: The Rehabilitation of Speech: A Text-Book of Diagnostic and Corrective Procedures, New York, Harper & Brothers, 1937.

22. Karlin, I. W., and Kennedy, L.: Delay in the Development of Speech, Am. J. Dis. Child. 51: 1138 (May) 1936.

especially the mother, must be relieved of this sense of guilt. They should be told that the development of speech is subject to individual variations and that emotional and environmental factors will condition a child to certain types of behavior and performance. Above anything else, he needs a feeling of security and love at home. At the same time, he needs positive guidance. The parents must have a feeling of certainty in handling the child, and they should not interfere with one another in their everyday dealings with him.

The child's attention should not be drawn to his speech difficulty.[23] In his presence the parents should talk in a simple, relaxed and easy manner. They should not try to increase or improve his vocabulary. They should notice the situations or circumstances during which he talks best, and these conditions should be encouraged. Conditions under which he stutters more should be discouraged. Self reliance should be encouraged especially in eating and playing. A period of relaxation should be provided every day during which the mother reads to the child in a calm and easy manner.

A question is frequently posed about the relationship between handedness and stuttering. There would appear to be no reason to believe that there is any. However, every child with a speech disorder should be encouraged to develop his dominant hand, be it left or right. The significant factor is the method used in the enforcement of handedness.

There are no drugs today for the treatment of stuttering, although in children who show decided tension and spasms at the onset of the treatment I use for a short perod either bromides or neostigmine and atropine. Phenobarbital appears to make the children more tense and they stutter worse.[24]

This is the indirect method of treatment of stuttering used with the preschool child. He is not made conscious of his defect, and no direct speech therapy is given. The treatment is through the parents. To ignore the defect or to encourage the false idea that stuttering is nonexistent and that every child hesitates when he talks is to waste much valuable time. The keynote to the problem of stuttering is early recognition and treatment.

The treatment of the older child, the adolescent and the adult is a much more difficult problem. Since his social contacts are wider and more complex, individual problems and their adjustments have to be discussed. The problem of stuttering is discussed freely and openly. This will remove some of the aura of mystery that surrounds it. An effort is made to lessen the stutterer's fears and anxieties and to increase his self confidence. A pattern of speech is provided which is best for him. While many of these problems have to be worked out individually, group therapy has its values and should be made use of.

A question is often asked about the value of hypnosis and psychoanalysis. Neither method has cured stuttering. There are those who say: "Once a stutterer, always a stutterer," and there are those who contend that the therapeutic goal is achieved when the stutterer stops being concerned about his defect. The stutterer, however, would like to get rid of his difficulty. This should be the therapeutic goal.

23. Karlin, I. W., and Kennedy, L.: Stuttering: Problem and Suggested Treatment, Am. J. Dis. Child **55**: 383 (Feb.) 1938.

24. Karlin, I. W.: Stuttering, Arch. Pediat. **63**: 23, 1946; Stuttering, Am. J. Nursing **48**: 42, 1948.

SUMMARY

Stuttering is a disturbance in the rhythm of speech, and the symptoms unfold gradually. The principal present day theories are that stuttering is (1) a psychoneurosis or a personality disorder; (2) a habit or a behavior that is learned, and (3) an organic disorder of language function. The theory that it is due primarily to a slower process of myelinization of the cortical speech areas offers a satisfactory explanation of the basic facts. Emotional and environmental factors play an important role in unfolding and perpetuating the disorder. Emphasis in the treatment should be on prevention. Every preschool child who shows early signs of stuttering should receive immediate treatment.

1509 Union Street.

ADMINISTRATION OF AMINOPHYLLINE (THEOPHYLLINE ETHYLENEDIAMINE)

SAMUEL H. WAXLER, M.D.
and
JEROME A. SCHACK, M.D.
Washington, D. C.

Theophylline and related xanthine derivatives are used extensively, at the present time, in the management of cardiovascular and respiratory diseases. However, there are conflicting opinions among investigators concerning the therapeutic value of these compounds in clinical conditions for which they are prescribed.

Schack and Waxler [1] have shown that theophylline is restricted to the plasma, does not penetrate the red cell membrane and is only slightly bound to the proteins of the blood. Also, the drug appears to be only slightly bound to tissue proteins, since it was readily removed from the liver by simple perfusion with saline solution. It may therefore be suggested that any therapeutic effect of this drug will be closely related to its level in the blood.

A study was undertaken to evaluate the dosage forms in which these drugs are commonly prescribed for administration by the intravenous, intramuscular, rectal and oral routes. Particular attention has been paid to the rate of appearance and disappearance of the drug in the blood stream and the level of the drug attained. Although this study does not represent an attempt at evaluation of the therapeutic value of theophylline, it is hoped that it will serve as a guide to the most rational dosage forms in further use or investigation of this drug.

METHODS

The theophylline analyses were performed by a method devised by us. Briefly, this method consists of a chloroform-isopropyl alcohol extraction of blood, with final dilution of the theophylline in tenth-normal sodium hydroxide solution. The ultraviolet absorption of the alkaline solution is determined in the Beckman model DU spectrophotometer. The method as adapted for this study offers a precision of plus or minus 3 per cent at levels of 100 micrograms of theo-

From the Department of Basic Science, Army Medical Department Research and Graduate School; present address: 319 West Portal Avenue, San Francisco (Dr. Waxler) and Michael Reese Hospital, Chicago (Dr. Schack).

1. Schack, J. A., and Waxler, S. H.: An Ultraviolet Spectrophotometric Method for the Determination of Theophylline and Theobromine in Blood and Tissues, J. Pharmacol. & Exper. Therap. **97**: 283 (Nov.) 1949.

phylline per hundred cubic centimeters of blood. We have considered this as the lowest significant blood level of theophylline. All determinations were performed in duplicate, and each figure presented represents an average of the two values obtained.

The study was based on 1,622 determinations performed on blood samples obtained from 225 persons. Of this number, 203 were normal subjects. The remaining 22 subjects, all of whom received aminophylline by the intravenous route, were under treatment for various cardiovascular ailments.

In preparation for the determination all other medicaments were withheld one day prior to, and during, the test. In addition, coffee, tea and kola drinks were omitted from the diet before and during the test period. The subjects were given the generally accepted therapeutic doses of the drug: intravenously, 0.25 Gm.; intramuscularly, 0.25 and 0.5 Gm.; rectally, 0.5 Gm., and orally, 0.2 and 0.3 Gm. In all but one of the experiments the evaluation was based on a single dose of the aminophylline preparation. One group was given repeated doses over a period of six days. Although the weights of the subjects were noted, no attempt was made to correlate dosage with the patient's weight. The

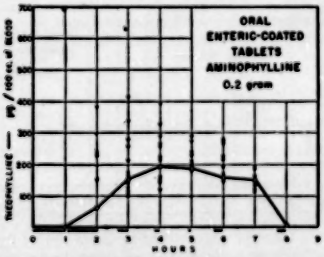


Fig. 1.—Blood theophylline levels following oral administration of two 0.1 Gm. enteric-coated aminophylline tablets. (Full dots represent individual theophylline levels; open circles represent averages. This holds true for all figures that follow.)

routine procedure consisted of obtaining a preliminary blood sample for "blank" estimation and then administering the aminophylline preparation to the subject. Subsequently at least two and up to eight blood samples were then drawn from each patient at different time intervals. We have used aminophylline (theophylline ethylenediamine), and the determinations measure only the theophylline blood levels of the preparation.

The data have been presented in the form of scatter diagrams to indicate the range of distribution of the values obtained.

RESULTS

Oral.—Twenty-four subjects received two enteric-coated 0.1 Gm. tablets of aminophylline postprandially. Blood samples were then withdrawn at hourly intervals and the concentration of theophylline determined. Data of figure 1 indicate that in no case was there significant absorption from the gastrointestinal tract during the first hour. Significant blood levels were obtained in only 4 of 16 subjects by the second hour. It was not until the third hour that a significant mean theophylline level appeared. The mean values then rose slightly and maintained a plateau level through the fourth and fifth hours. Thereafter the mean level began to decline, and at the eighth hour the blood was essentially free of theophylline.

There were some subjects in whose blood no theophylline could be demonstrated at any time after swallowing of the tablets. These apparently represented persons in whom absorption did not occur from the

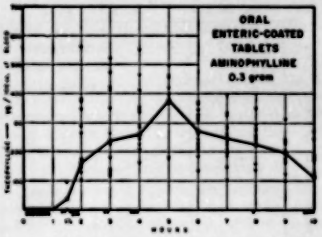


Fig. 2.—Blood theophylline levels following oral administration of three 0.1 Gm. enteric-coated aminophylline tablets.

alimentary tract. When absorption apparently occurred there was a notably wide range of distribution of theophylline levels in the blood for each time interval examined.

The effects of a somewhat larger dose of enteric-coated aminophylline tablets were next studied. This experiment was similar to the preceding one in all respects except for the increase in the dose of the drug. Forty-three patients were each given three 0.1 Gm. enteric-coated aminophylline tablets. Figure 2 represents in scattered form the values obtained with this dose. As before, theophylline was not demonstrable in the blood stream at the end of the first hour. In two hours 10 of the 17 persons tested had appreciable blood levels, which rose further by the third hour. Comparison of this group with the preceding group (fig. 1) reveals that the levels attained were noticeably higher and remained relatively more constant for a longer period of time than did the levels of the group receiving the smaller dose. Only at the end of the tenth hour did the theophylline begin to disappear from the blood stream.

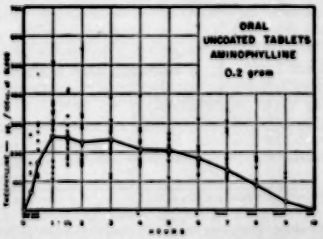


Fig. 3.—Blood theophylline levels following oral administration of two 0.1 Gm. uncoated aminophylline tablets.

The great variability in the blood levels exhibited by the group given the enteric-coated tablets led us to question whether this variation was inherent in the oral route of administration or was attributable to the enteric coating of the tablets. We therefore compared this type of tablet with plain uncoated aminophylline tablets.

Each of 49 subjects was given (postprandially) two 0.1 Gm. uncoated tablets. Subsequent analysis of the blood showed that in 4 of 10 persons (fig. 3) significant absorption of theophylline had occurred in fifteen minutes and the number increased to 9 of 15 in one-half hour. By the first hour all the persons so tested had a definite blood theophylline level. The blood levels

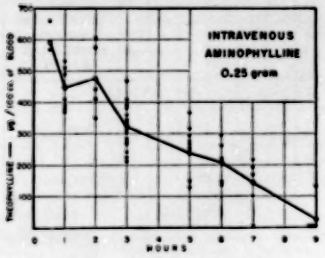


Fig. 4.—Blood theophylline levels following intravenous administration of 0.25 Gm. aminophylline.

tended to be higher than those reached with enteric-coated tablets in the same dosage of 0.2 Gm. (fig. 1). Also, more than half the subjects had definite, demonstrable levels at the end of eight hours with complete disappearance by the tenth hour. There was no failure of absorption of theophylline from the alimentary tract with the uncoated tablet form of dosage.

Intravenous.—A group of 22 patients was given an intravenous infusion of 0.25 Gm. of aminophylline in 10 cc. of saline solution. The fluid was given slowly over a period of five minutes, and blood samples were then drawn at intervals over a period of ten hours. The earliest samples drawn at the half-hour period showed a mean value of 600 micrograms per hundred cubic centimeters of blood (fig. 4). There was a progressive gradual decrease in the blood titer of theo-

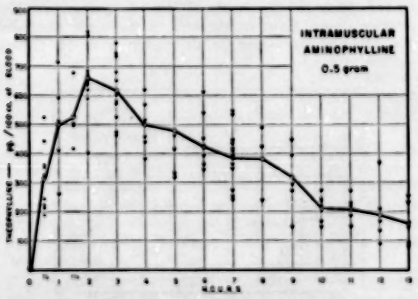


Fig. 5.—Blood theophylline levels following intramuscular administration of 0.5 Gm. aminophylline.

phylline from this time until eventual disappearance of the compound from the blood stream at the ninth hour. This is essentially the same curve which is obtained when dogs are given intravenous injections with doses referable to their body weight.

Intramuscular.—In one experiment each of 20 subjects received 0.5 Gm. (2 cc.) of aminophylline into the gluteal muscles and blood samples were taken during the subsequent thirteen hours. With a single injection of this drug a significant blood level was still evident at the end of this time. Absorption from the muscle was rapid, and a high blood concentration was reached within thirty minutes to one hour. This was maintained throughout the next eight hours and was followed by a gradual decrease of theophylline in the blood (fig. 5).

Thirty patients received intramuscular injections with 0.25 Gm. (1 cc.) of aminophylline. The blood levels which were obtained with this dosage were about 50 per cent lower than those obtained in the previous experiment with the 0.5 Gm. dose. Absorption was rapid, and a continuous level was maintained for over five hours. From this time there was a decrease in the level, and by the ninth hour most of the blood samples were negative for theophylline (fig. 6).

Rectal.—A suppository (0.5 Gm.) was inserted about 3 inches (7.62 cm.) beyond the anal opening of each of 34 subjects, and the blood theophylline determinations were made during the succeeding ten hours. It was noted that many subjects who were given suppositories showed no blood theophylline level when tested, the

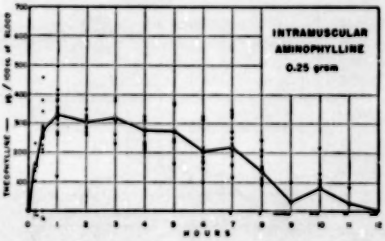


Fig. 6.—Blood theophylline levels following intramuscular administration of 0.25 Gm. aminophylline.

suppositories having been expelled shortly after insertion. In figure 7 we have included only those subjects who showed some absorption, as indicated by blood theophylline content. The rectal route of administration resulted in the greatest scattering of values, indicating pronounced individual differences in the absorption of aminophylline from the rectum. Some patients showed no appreciable theophylline levels as late as the fifth and sixth hour after insertion of the suppository, while others had high levels as early as the fourth hour.

Repeated Dosage.—To evaluate the blood level attained with repeated doses of aminophylline, 4 patients were given two 0.1 Gm. enteric-coated aminophylline tablets three times a day after meals. A premedication blood sample was drawn at the outset, and subsequent blood samples were withdrawn daily (8 a. m. and 8 p. m.). The morning blood sample was taken before breakfast, thus measuring the blood theophylline level achieved with the preceding day's medication. The data of figure 8 show that evening samples contained large amounts of theophylline. None of the morning samples had any definite blood level following the combined 0.6 Gm. daily dose. However, when the dosage was increased to 0.9 Gm. of aminophylline per day (in 0.3 Gm. doses), appreciable blood levels were obtained the following morning. The study was not

continued for a long enough period to allow any judgment to be made concerning accumulation of the drug with continuous administration.

COMMENT

A résumé of the data brings out certain points. The high initial level obtained by intravenous administration of aminophylline is followed by a progressive decrease

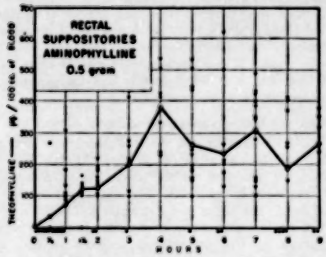


Fig. 7.—Blood theophylline levels following rectal administration of 0.5 Gm. aminophylline.

in the blood level of theophylline and disappearance of the drug from the blood stream in about nine hours. If this form of therapy is the one of choice, it might be suggested that either a higher dosage (0.5 Gm.) be given initially or that a second dose be given after about eight hours. At present we do not have enough data on patients with the higher dosage to comment.

Because of the pain attendant on intramuscular injections of aminophylline, this route must be approached with some reservation. It appears, however, to be the optimal route with which to maintain a sustained level over a long period of time. This is particularly true of the 0.5 Gm. dose. This quantity appears preferable since the group given the smaller dose complained of as

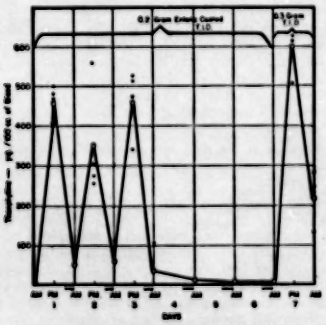


Fig. 8.—Blood theophylline levels during oral administration of aminophylline (three times a day) over a period of one week.

much pain as did the group given the larger dose, and the values obtained with the 0.5 Gm. dose were almost twice as high and persisted about double the time period. Apparently the rate of absorption of theophylline from the muscle depot rather closely approximates the overall rate of removal of the drug by excretion and metabolic breakdown. Modification of the pain of intramuscular injection by admixture of the aminophylline with procaine solution has been attempted with limited success.

The variation of absorption encountered with enteric-coated tablets was not unexpected. The degree of absorption of such preparations seems to depend on the ability of the subject to digest away the coating, thus making the drug available. It may be noted that in our experiments two and three enteric-coated tablets were given to obtain the desired dosage rather than a single tablet. Probably this increased the chances of absorption through utilization of at least one of the tablets. From the results, 0.2 Gm. of aminophylline is not sufficient to maintain a level through a twenty-four hour period even if given three to four times a day. Increasing the dose to 0.3 Gm. tends to maintain a twenty-four hour level if given three to four times during a day.

When plain uncoated tablets are utilized, the factor of unreliability of absorption appears to be eliminated. The tablet seems readily absorbed, and in no case did it pass through the alimentary canal without the occurrence of absorption, as judged by blood theophylline levels. In addition the level achieved in the blood is proportional to the amount of drug given, and high levels of theophylline are obtainable with the oral route. The uncoated preparation appears to be the more logical choice when the oral route is indicated.

The results obtained with the rectal suppositories were varied. Some subjects showed satisfactory absorption while others showed no level until many hours after insertion of the suppository. Absorption from the rectum appears to be dependent on retention of the suppository for a long enough time to allow melting of the vehicle and subsequent absorption of the contained medicament.

SUMMARY

1. The theophylline levels in the circulating blood have been studied after the administration of various doses of a theophylline preparation, aminophylline, by the intravenous, intramuscular, oral and rectal routes.

2. Intravenous injection of 0.25 Gm. of aminophylline is followed by a progressive fall of blood levels approaching zero concentration by nine hours.

3. Intramuscular injection of 0.5 Gm. of aminophylline results in sustained high blood levels of theophylline. Appreciable levels persist for about thirteen hours. With a smaller dose of 0.25 Gm., the levels are 50 per cent lower and persist about eight hours.

4. There is wide variation in the blood levels after oral ingestion of enteric-coated aminophylline tablets. About two hours are required before theophylline can be demonstrated in the blood stream with 0.2 or 0.3 Gm. doses. Significant levels of theophylline persist for seven hours with the smaller dose and ten hours with the larger dose.

5. There is a regular rapid appearance of theophylline in the circulating blood as early as fifteen minutes after ingestion of a 0.2 Gm. uncoated aminophylline tablet. Significant levels of theophylline persist for nine hours.

6. The blood levels obtained with 0.5 Gm. aminophylline suppositories show wide variation.

7. In view of these results, future studies of the usefulness of theophylline preparations should be based on the blood levels of the drug achieved rather than on the total dose given by various routes.

Clinical Notes, Suggestions and New Instruments

EXOGENOUS HEMOCHROMATOSIS FOLLOWING MULTIPLE BLOOD TRANSFUSIONS

ROBERT P. NORRIS, M.D.
and
F. J. McEWEN, M.D.
Wichita, Kan.

Hemochromatosis was originally described by Hartman and Chausser in 1882. It was called "bronze diabetes" because of the associated conditions of diabetes mellitus and skin pigmentation. In 1889 Von Recklinghausen revealed that the pigmentation of skin and viscera was the result of deposits of hemosiderin and hemofuscin.

Hemochromatosis has been considered rare. At the time of the last complete review of the literature in 1947,[1] there were 436 reported cases. The usual picture in fully developed hemochromatosis shows: (*a*) an enlarged liver (caused by a hypertrophic type of cirrhosis); (*b*) a bronze pigmentation of the skin, which usually has a peculiar slate-blue color or a metallic appearance; (*c*) diabetes mellitus and, possibly, (*d*) a form of sexual hypoplasia characterized by impotence and an alteration of the hair distribution. One or more of these features may be absent in any case of hemochromatosis. The disease is much more common in men, being roughly 20 times more frequent than in women. It is practically unknown in patients under the age of 20 and has its highest incidence in the age group of 40 to 55.

There are excellent descriptions of hemochromatosis in the literature, and these discuss adequately what is known of the etiology, pathology and treatment of this disorder. This paper is not intended to cover those points but to report the appearance of hemochromatosis after multiple blood transfusions in a patient with aplastic anemia.

Kark [2] described the first case of hemochromatosis associated with multiple blood transfusions in 1937. In 1948 Schwartz and Blumenthal [3] reviewed the literature of reported cases and added 5 of their own to this group, bringing the total of cases of so-called exogenous hemochromatosis to 13. At first it was considered that hemochromatosis developed in these patients merely because they had received so much iron that they were unable to utilize it and that this resulted in the deposition of abnormally large amounts of hemosiderin in various tissues, ultimately leading to the development of cirrhosis of the liver and fibrosis of the pancreas and other glandular organs. There are cases reported in which the quantitative blood given by transfusion has been too small to account for the large amounts of iron found at autopsy.

Of the 13 patients with anemia who had multiple blood transfusions and in whom hemochromatosis developed, only 2 had clinically demonstrable diabetes and only 5 had skin changes worthy of note. In the case reported here the patient had both diabetes and skin pigment changes. One of the interesting differences between exogenous hemochromatosis and the typical, or endogenous, hemochromatosis is the decided difference of the ratio of men to women. In typical or endogenous hemochromatosis, the ratio is about 20 men to 1 woman. In the series of 13 of the exogenous type cases so far reported, there were 7 men and 6 women. It is to be anticipated that more patients with hemochromatosis will be seen with all the manifestations of the disease because of the increasing utilization of whole blood transfusions and the greater longevity of patients who are producing inadequate quantities of red blood cells of their own.

From the Medical Department of the Wichita Clinic, Wichita.
Dr. McEwen is a Fellow of the American College of Physicians.

1. Berk, J. E., and Lieber, M. M.: Primary Carcinoma of the Liver in Hemochromatosis, Am. J. M. Sc. **202**:708 (Nov.) 1941.
2. Kark, R. M., cited by Blumenthal and Schwartz.[3]
3. Blumenthal, S. A., and Schwartz, S. O.: Exogenous Hemochromatosis Resulting from Blood Transfusions, Blood **3**:617 (June) 1948.

Zeltmacher and Bevans [4] reported on aplastic anemia and its association with hemochromatosis. They felt that the cause of aplastic anemia is still obscure or unknown but that it might be related to exogenous and endogenous toxins of one form or another. Such toxic elements, perhaps in association with factors of deficiency, may lead to permanent liver damage; it follows that patients with pseudoaplastic or hypoplastic anemia with a rather prolonged course may come to have retention of iron, pigmentation of the skin and cirrhosis of the liver, and, when the pancreas becomes involved in the process, diabetes may develop. The iron derived from destruction of intrinsic and transfused blood is not used in the formation of hemoglobin but is mechanically deposited in various organs. If the duration of the aplastic anemia is long enough, there may be large accumulations of iron, and it is felt that this lays the groundwork for the development of hemochromatosis.

REPORT OF CASE

Mrs. C. J., a 71 year old white woman, was first seen in December 1945 by one of us (F. J. M.). At that time she was complaining of frequent, rather severe "nosebleeds" and had observed red blood in the stools. She stated that she had always had good health but in the past five years had noted some bleeding in the stools which came in episodes lasting several days, with intervals of freedom between episodes of two to three months. During the previous year she had had frequent "nosebleeds," averaging about one per week, but at times she had some epistaxis every day. These seemed to occur more readily if she was physically active. She stated that for twenty or twenty-five years she had experienced episodes of pain in the upper right portion of the abdomen beneath the ribs lasting several days. This pain occasionally was rather severe but had not been associated with indigestion, nausea or vomiting. She stated that she had noted some rapid heart action on moderate exertion. Artificial menopause had been induced with radium at the age of 53 years, and she had had no vaginal spotting or bleeding since that time. She had had recurrent tonsillitis and sore throats each winter for many years in her early life. She had had typhoid at the age of 15 and was supposed to have had diphtheria and scarlet fever as a child. Her tonsils were removed when she was 42 years of age; there had been no other surgical procedures. There had been no illness similar to hers and no other hemorrhagic disease or blood dyscrasia in her family to her knowledge. There was no history of exposure to any known marrow depressant.

Physical examination showed essentially normal conditions. There was no lymphadenopathy. The spleen and liver could not be palpated. On her skin she had many small ecchymoses, generalized in distribution. Pelvic examination showed that the vaginal mucosa tended to bleed rather easily. Rectal examination revealed a small bleeding point inside the rectum, but no masses were felt.

The diagnosis at the time was considered to be that of one of the disorders associated with thrombopenia, probably thrombopenic purpura.

Laboratory observations made when the patient was first seen were as follows: red blood cell count, 3,500,000; hemoglobin, 9.9 Gm. per hundred cubic centimeters; white blood cell count, 6,400; differential cell count, 67 per cent polymorphonuclear leukocytes, 31 per cent lymphocytes and 2 per cent monocytes, and platelet count, 90,000. The patient was given symptomatic treatment and in addition was given capsules containing 0.455 Gm. of liver with stomach, 0.1 Gm. of anhydrous ferrous sulfate, 0.15 mg. of thiamine hydrochloride and 0.05 mg. of riboflavin (lextron® ferrous capsules) three times daily after meals.

She was seen again in January 1946, when she stated that she had passed a kidney stone on Dec. 31, 1945. She stated she had felt well since then. She had had epistaxis about three times during the preceding week and had had one rather severe episode of rectal bleeding. Her physical examination continued to show normal conditions. There were a few ecchymoses, but

4. Zeltmacher, K., and Bevans, M.: Aplastic Anemia and Its Association with Hemochromatosis, Arch. Int. Med. **76**:395 (June) 1945.

they appeared to be fading. After that time the patient was seen on numerous occasions with essentially the same symptoms.

In June 1946 the patient was seen by Dr. Sloan Wilson, of the University of Kansas Medical Center, who made a diagnosis of aplastic or hypoplastic anemia of unknown cause. This diagnosis was made after a complete blood study and biopsy of the bone marrow. The sternal bone marrow was hypoplastic, and there was an increase in fat cells and cellular debris such as is seen in so-called aplastic or hypoplastic anemia.

The patient received multiple transfusions of whole blood, on the average of one every two weeks until she had had a total of about 100 blood transfusions, of approximately 500 cc. each. The red blood cell count after the transfusions remained between 2,500,000 and 3,500,000. The leukocyte count varied from 2,500 to 6,000 per cubic millimeter.

The patient reported to Wesley Hospital June 13, 1949. About two months prior to that time she had an "upset stomach." She had no vomiting but had pain in the upper part of the abdomen, especially after she took any food or medicament. She had deep, aching pains in the epigastrium for about thirty minutes after meals or after medication. She had stopped taking all oral medicaments but continued to receive blood transfusions every two weeks. About two weeks before admission she felt that she could no longer take food. She attempted to maintain herself on a diet of buttermilk and toast. To her knowledge she had had no tarry bowel movements but had had some red-streaked stools. Recently many new petechiae and ecchymoses had developed. There had been no vaginal bleeding, epistaxis or bleeding from the gums. Her strength was good after blood transfusions, but she weakened rather rapidly after having one.

At the time of admission, she had a normal temperature and a pulse rate of 70 beats per minute. Examination of the head and neck revealed no new findings. The heart and lungs were normal. There was tenderness in the region of the gallbladder. Pelvic and rectal examinations showed normal conditions. She had many petechiae and ecchymoses, generalized in distribution, over her arms, legs and body. There was a generalized bronzed or icteric tint to the skin. Examination of the blood sugar during her hospitalization showed it to be 260 mg. per hundred cubic centimeters.

The red blood cell count averaged between 2,500,000 and 3,000,000; the white blood cell count was as low as 1,500 at times during her hospitalization. The platelet count varied from 14,000 to 20,000. The red cell fragility in hypotonic sodium chloride showed a range of 0.42 to 0.30 per cent. The icterus index was 11 units. Gastric analysis following the Ewald test meal revealed no free acid in the first two aspirations. There were 5 degrees of free acid and 13 degrees of total acidity in the third specimen withdrawn. A roentgenogram of the abdomen revealed a large solitary gallstone. The stomach and colon were examined by means of barium contrast and were reported as normal. During this admission the bone marrow was studied by aspiration and showed the hypoplasia previously described.

The patient received several transfusions during her hospitalization. She was placed on a diet for patients with diabetes, and the blood sugar was maintained at levels between 114 and and 150 mg. per hundred cubic centimeter with 20 units of protamine-zinc insulin daily. A small segment of skin was removed from the anterior tibial region and was reported as containing the deposition of iron pigment characteristic of hemochromatosis of the skin. She was dismissed July 12, not feeling as well as usual.

The patient was readmitted on July 30. She had fared well at home for about ten days but had noted some giddiness and occasionally fell down. For the previous three to four days she had had glycosuria (4 plus), which was her main concern on admission. She had also had some abdominal cramping during a bowel movement. The red cell count on admission was 1,200,000, and the leukocyte count was 1,000 per cubic millimeter. The hemoglobin was 3.9 Gm. per hundred cubic centimeters. The blood sugar was 496 mg. per hundred cubic centimeters. With administration of insulin the blood sugar the following day had been brought to a level of 186 mg. per hundred cubic centimeters. She did not show symptoms of acidosis at that time. By August 2 the amount of blood sugar had gradually increased to 536 mg. per hundred cubic centimeters in spite of administration of increasing amounts of insulin. She was given whole blood transfusions, but she became progressively weaker and died August 2.

An autopsy was performed by Dr. B. E. Stofer, pathologist at Wesley Hospital. Gross examination showed pigmentation of the skin, as previously described. There was no increase in the amount of fluid in the pleural or pericardial cavities. When the small intestine was opened, a large amount of gross blood was found in the lumen and there was a rather pronounced hemorrhagic appearance of the mucosa of the stomach, jejunum and ileum. Microscopic study of the tissues which were sectioned revealed large amounts of iron in the skin, ovary, bladder, fallopian tube, adrenal glands, bowel mucosa, spleen, heart, kidney tubules, lung and thyroid gland. Examination of the liver revealed no cirrhosis, but there was decided fatty infiltration in both the portal spaces and the lobules. There was a massive deposit of iron pigment in the liver. Because of an unfortunate circumstance, the pancreas was not sectioned for microscopic study. The observations at autopsy revealed the massive hemosiderosis considered characteristic of hemochromatosis.

SUMMARY

A case of so-called exogenous hemochromatosis is reported in a 71 year old white woman. She had received a total of approximately 100 blood transfusions of 500 cc. each at the time the diagnosis of hemochromatosis was made. The diagnosis prior to the administration of the blood was that of aplastic or hypoplastic anemia of unknown cause. Bronze pigmentation as well as clinical diabetes developed. The patient died after a diffuse gastrointestinal hemorrhage. Until June 1948 there had been 13 cases of exogenous hemochromatosis resulting from multiple blood transfusions reported. With the more widespread availability of whole blood, there will probably be more of these cases observed.

AGRANULOCYTOSIS FROM TRIPELENNAMINE (PYRIBENZAMINE®) HYDROCHLORIDE

A. W. HILKER, M.D.
Eau Claire, Wis.

When this report was started, to my knowledge only one reference to agranulocytosis from tripelennamine (pyribenzamine®) hydrochloride had appeared in the literature.[1] At the time this report was completed, Cahan, Meilman and Jacobson[2] had currently reported a case of agranulocytosis following tripelennamine therapy. The following case is one of agranulocytosis after the drug had been taken three times daily for eight weeks because of urticaria. No other medicaments were involved.

Daily Leukocyte and Differential Count of Patient Receiving Treatment for Agranulocytosis

Day	W. B. C.	Neutrophils	Lymphocytes	Monocytes	Eosinophils
1	1,700	6	68	26	0
2	2,400	16	62	21	1
3	4,650	28	50	22	0
4	5,300	36	55	8	1
5	5,700	43	48	8	1
6	6,300	56	40	4	0
13	9,200	62	34	3	1
21	7,200	66	26	4	2

REPORT OF A CASE

A nurse aged 39 sought medical attention because of malaise, prostration and urticaria, the last mentioned of eight weeks' duration. The distribution of the urticaria was general, including her eyelids and lips. The patient started taking tripelen-

From the Department of Internal Medicine, Midelfart Clinic.

1. Blanton, W. B., and Owens, M. E. B., Jr.: Granulocytopenia Due Probably to "Pyribenzamine," J. A. M. A. 134:454-455 (May 31) 1947.

2. Cahan, A. M.; Meilman, E., and Jacobson, B. M.: Agranulocytosis Following Pyribenzamine, New England J. Med. 241:863-867, 1949.

namine hydrochloride, 50 mg. three times daily, when the lesions first appeared. The medicament seemed to keep the urticaria fairly well controlled. However, after seven weeks she began to feel weak, and this weakness progressed to almost complete prostration. She stated that everything, "suddenly had become too much" for her. She had taken no other medicament for the past eight weeks except three tablets of the antihistamic agent daily.

Physical examination revealed a few large blotches of giant urticaria on the patient's arms and flanks. There was no abnormality of the mucous membranes, gums or throat. The blood pressure was within normal limits, heart and lungs were normal, and abdominal, pelvic and rectal examinations revealed essentially normal conditions. The temperature was 98.4 F. The hemoglobin was 12.8 Gm. per hundred cubic centimeters; the red blood cell count was 4,140,000, and the leukocytes 1,700. The differential count showed only 6 neutrophils; the remaining cells were lymphocytes and monocytes.

The patient was hospitalized, tripelennamine therapy was stopped and 50,000 units of penicillin was administered every three hours. In the accompanying table the white blood cell count and differential count of the patient are recorded by hospital day. Two blood cell counts taken on the thirteenth and twenty-first days following the first hospital day are also recorded.

COMMENT

Since the patient had taken no other medicament for eight weeks except tripelennamine hydrochloride, 50 mg. three times a day, evidence that this medicament was the agent responsible for the agranulocytosis appears to be conclusive. The rapid response to penicillin treatment after the withdrawal of the antihistaminic drug is further evidence that the latter caused the neutropenia.

SUMMARY

To my knowledge 2 other cases of agranulocytosis due to tripelennamine (pyribenzamine®) hydrochloride have been reported previously in the literature. This third case seems to be clearcut, since no other medicament except the antihistaminic drug was involved.

AGRANULOCYTOSIS AFTER ANTIHISTAMINIC THERAPY

Report of a Case Following the Prolonged Use of Tripelennamine (Pyribenzamine®) Hydrochloride

HARRISON S. MARTLAND Jr., M.D.
and
JOHN K. GUCK, M.D.
New York

The toxic manifestations of the antihistaminic agents are generally considered to be mild in nature. The usual symptoms are drowsiness and slight gastrointestinal and central nervous system disturbances.[1] Minor skin eruptions have been reported but are uncommon.[2]

The occurrence of severe reactions to the antihistaminic drugs is not sufficiently appreciated either by the medical profession, the pharmaceutical houses, the Food and Drug Administration or the laity. We therefore think it appropriate to report a serious effect, namely, agranulocytosis, following the prolonged use of an antihistaminic agent, in this case tripelennamine (pyribenzamine®) hydrochloride.

This report is timely because of the current flooding of the highly competitive drug market with innumerable antihistaminic preparations, many of which have had inadequate clinical trial. Some are being widely publicized as the conqueror of the common cold and are obtainable without prescription. Unfortunately, physicians themselves have been caught in this tide of overenthusiasm. Additional case reports of agranulocytosis due to antihistaminic preparations have already appeared in the literature.[3]

From the second medical service at Lenox Hill Hospital, assistant adjunct physician (Dr. Martland) and resident in medicine (Dr. Guck).

1. Loveless, M. H., and Dworin, M.: Bull. New York Acad. Med. **25**: 473-487 (Aug.) 1949.

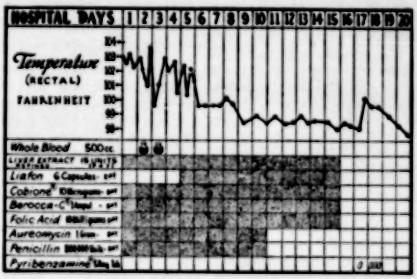
2. Epstein, E.: Dermatitis Occurring During Therapy with Tripelennamine Hydrochloride ("Pyribenzamine Hydrochloride"), J. A. M. A. **134**: 782 (June 28) 1947.

3. Blanton, W. B., and Owens, M. E. B., Jr.: Granulocytopenia Due Probably to "Pyribenzamine," J. A. M. A. **134**: 454-455 (May 31) 1947. van Loon, J. A., and Kanters, J. A. C.: Nederl. tijdschr. v. geneesk. **93**: 1070-1074 (April 2) 1949. Clement, R., and Godlewski, S.: Bull. et mém. Soc. méd. d. hôp. de Paris **61**: 103-105 (March 2) 1945. Cahan, A. M.; Meilman, E., and Jacobson, B. M.: New England J. Med. **241**: 863-867 (Dec. 1) 1949.

REPORT OF A CASE

A retired nurse aged 60 had symptoms of hay fever for many years, manifested in the late summer and autumn as a mild but persistent ophthalmorhinitis. Previous desensitization courses had given her little or no relief.

In August 1949, on the advice of a lay friend, she began taking tablets of tripelennamine hydrochloride, 50 mg. three times a day, with prompt relief of her slight symptoms. After the first



Temperature and treatment chart. Note rise in temperature after test dose of tripelennamine hydrochloride.

few doses, however, she noted ill defined general malaise with headaches and transient lower abdominal cramps with mild diarrhea. Two weeks later she began to experience anorexia and severe aching in the lumbosacral region. She attributed these symptoms to chilling following a swim at the beach; however, for the next three weeks the symptoms increased insidiously, until three days before admission there developed pronounced weakness, anorexia and feverish and chilly sensations. Her temperature reached 102 F. (oral). Two days later, it rose to 104 F. Her physician had found nothing in the history or physical examination to account for her condition and accordingly advised hospitalization.

She had taken tripelennamine for a five week period until the day of hospitalization. During this time she had ingested a total of eighty-five 50 mg. tablets, having slightly tapered off on the medicament in the two weeks prior to admission. Although the antihistaminic drug had promptly eliminated the hay fever symptoms and there were no subsequent respiratory complaints, she had continued taking the tablets because the pollen season still prevailed and she feared the return of her hay fever.

Careful questioning revealed that she had taken no other medicaments except two acetylsalicylic acid and acetophenetidin capsules (each capsule containing 3 grains [0.19 Gm.] of the former and 2 grains [0.13 Gm.] of the latter drug) on the night prior to admission and one digitalis tablet on the morning of admission because of rapid pulse. In addition, she had been in the habit of taking 1 ounce (30 cc.) of liquid petrolatum twice a day for the past twenty years. Her past history was otherwise noncontributory.

On admission (Sept. 30, 1949) the patient was acutely ill and extremely apprehensive because she feared that her fever and symptoms were due to some obscure and fatal disease. The temperature was 102.8 F., the pulse rate 120 and the respiratory rate 20. The blood pressure was 190 systolic and 80 diastolic.

V 1
195

Complete physical examination revealed nothing to explain her condition. There was no significantly obvious focus of infection, merely a mild injection of the nasopharynx.

Initial white blood cell counts were 1,950 and 1,300 with almost complete absence of granulocytes, the cells on smear being almost entirely lymphocytes (table). On the second hospital day an aspiration of the sternal bone marrow was performed and revealed maturation arrest of the granular cells at the myelocyte stage with an increase of lymphoid cells, an observation typical of toxic agranulocytosis. Blood studies did not reveal anemia at any time. A roentgenogram of the chest revealed essentially normal conditions. Blood and urine cultures, febrile antigens (typhoid, paratyphoid and brucella) and tests for heterophil antibodies shortly after admission were all negative.

The patient was given penicillin and aureomycin prophylactically. She also received transfusions of whole blood. Refined liver extract, cobione® (crystalline vitamin B_{12}) and berocca-C® (vitamin B complex and ascorbic acid) were given parenterally. Liafon®[4] and folic acid (pteroylglutamic acid) were given orally. Therapy and temperature response thereto are shown on the accompanying illustration.

On the third hospital day the white blood cell count had risen to 3,000 with lymphocytes 56 per cent, polymorphonuclear cells 40 per cent, monocytes 2 per cent and eosinophils 2 per cent. By the sixth hospital day the temperature had returned to normal and the patient was asymptomatic. On the fifteenth hospital day the white blood cells had risen to 6,200 and the differential count was normal.

There was no evidence of skin or buccal lesions, lymphadenopathy or splenic or hepatic involvement at any time during her hospital stay.

On the seventeenth hospital day a 50 mg. test dose of tripelennamine hydrochloride was given orally. Shortly after the ingestion of this dose the patient began to experience again the general malaise, aching in lumbosacral region, weakness, headaches and lower abdominal cramps with diarrhea that appeared originally after her first few doses of the antihistaminic agent. A temperature rise to 100.6 F. was also noted.

Blood Examinations in Agranulocytosis After Antihistaminic Therapy

	Hospital Day								
	1	2	5	8	11	15	17	18	19
Red blood cells (millions/cu. mm.)	4.5	....	4.8	....	5.2	....	....	....	....
Hemoglobin (Gm.)	13.0	....	13.0	....	13.0	....	....	....	....
White blood cells (cu. mm.)	1,950	1,300	3,000	3,500	4,000	6,200	8,250	6,500	5,250
Polymorphonuclear cells	6%	9%	40%	54%	55%	55%	55%	67%	74%
Lymphocytes	94%	90%	56%	44%	40%	42%	42%	33%	20%
Monocytes	....	2%	2%	....	1%	4%	2%	....	....
Eosinophils	....	....	2%	....	1%	....	....	....	....
Basophils	....	....	....	2%	2%	1%	1%	....	....

On the following morning her symptoms had largely cleared and it was decided to continue the tripelennamine dosage to see what effect there might be on the blood. Accordingly on the eighteenth hospital day she was given three 50 mg. doses, with a reappearance and aggravation of all her symptoms except the diarrhea. During this test period serial blood cell counts showed a progressive lowering of the total white blood cell count although leukopenia or granulocytopenia did not develop. In view of the early repetition of symptoms from the tripelennamine we believed that further administration of the drug was an unjustifiable procedure.

SUMMARY

This case illustrates the occurrence of agranulocytosis following the prolonged use of an antihistaminic agent, in this case tripelennamine (pyribenzamine®) hydrochloride. This complication, although probably rare, is of such seriousness that in our opinion prolonged antihistaminic therapy warrants periodic determination of the blood count. This is of special importance because of the current competitive flooding of the market with innumerable antihistaminic preparations, many of which have had insufficient clinical trial. Because severe reactions do occur from the use of these agents, we believe that they should be available to the public only on a physician's prescription.

101 East Eighty-Ninth Street.

4. Each capsule contains: exsiccated ferrous sulfate 0.132 Gm., ascorbic acid 50 mg., folic acid 1.67 mg. and desiccated liver 0.5 Gm.

Council on Physical Medicine and Rehabilitation

REPORT OF THE COUNCIL

The Council on Physical Medicine and Rehabilitation has authorized publication of the following article.

HOWARD A. CARTER, *Secretary.*

AN APPRECIATION

The Council on Physical Medicine and Rehabilitation expresses its appreciation of the services of the following consultants, who so freely gave their assistance in the work of the Council during the year 1949: Drs. Conrad Berens, Edward Bigg, Raymond Carhart, Mrs. Eva Thompson Carson, Drs. Milton B. Cole, Alfred Cowan, G. de Takats, David C. Fainer, Alan R. Feinberg, Theodore Friedemann, Clarence J. Gamble, A. S. Gordon, John S. Hibben, John Huffman, I. F. Hummon, Ernest E. Irons, Mr. Richard E. Jones, Drs. Mary Karp, Louis R. Krasno, Margaret M. Kunde, Alfred Lewy, Clayton Loosli, Gordon Martin, Louis B. Newman, A. M. Olsen, Benjamin H. Orndoff, Stafford L. Osborne, Howard F. Polley, Charles E. Pope, Mr. Luther Ramer, Drs. John Reichert, Joseph Remlinger, O. H. Robertson, Steven O. Schwartz, Henry Schwerma, S. Richard Silverman and O. E. Van Alyea.

American Health Resorts.—Drs. F. A. Hellebrandt, M. B. Jarman, Walter S. McClellan and Euclid M. Smith.

Artificial Limbs.—Drs. Rufus H. Alldredge, Henry H. Kessler, Paul E. Klopsteg, Messrs. J. B. Korrady and Lucius Trautman.

Audiometers and Hearing Aids.—Drs. Gordon Berry, Hallowell Davis, Kenneth M. Day, Edmund P. Fowler, Isaac H. Jones, Dean Lierle, Moses H. Lurie, Douglas Macfarlan, C. Stewart Nash and Paul E. Sabine.

Clinical Thermometry.—Miss Johanna Busse, Drs. George Crile Jr., Eugene F. Du Bois, Steven M. Horvath, John Talbott and George W. Thorn.

Contraceptive Devices.—Drs. William J. Dieckmann, William W. Greulich, Walter J. Meek, Pendleton Tompkins and Mr. R. R. Olin.

Education.—Drs. Frances Baker, Robert L. Bennett Jr., Ben L. Boynton, Earl C. Elkins, H. Worley Kendell, M. E. Knapp, Richard Kovacs, Sedgwick Mead, Fred B. Moor, William H. Northway, Donald L. Rose, William H. Schmidt, Walter M. Solomon, Arthur L. Watkins, George D. Wilson, Charles S. Wise and Walter J. Zeiter.

Electrocardiographs.—Drs. Howard B. Burchell, George Fahr, Harold Feil, Harold E. B. Pardee, William D. Stroud and Carl J. Wiggers.

Electroencephalography.—Drs. Percival Bailey, Edward J. Baldes, Hallowell Davis and Frederic A. Gibbs.

Occupational Therapy.—Drs. Raymond B. Allen, Robert W. Johnson Jr., Winfred Overholser, Howard A. Rusk and William D. Stroud.

Ophthalmic Devices.—Drs. Thomas D. Allen, David G. Cogan, William F. Hughes Jr., Richard G. Scobee and Kenneth C. Swan.

Respirators.—Drs. Edward L. Compere and James L. Wilson.

Roentgen Rays and Radium and the Medical Aspects of Atomic Energy.—Drs. W. Edward Chamberlain, Arthur C. Christie, Kenneth S. Cole, L. F. Curtiss, Edwin C. Ernst, Hymer L. Friedell, Robert R. Newell, Eugene P. Pendergrass, U. V. Portmann, Edith H. Quimby, Lauriston S. Taylor, Stafford L. Warren and J. L. Weatherwax.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
535 N. DEARBORN ST. - - - CHICAGO 10, ILL.

Edited by
AUSTIN SMITH, M.D.

Associate Editor
JOHNSON F. HAMMOND, M.D.

Editor for Current Medical Literature, GEORGE HALPERIN, M.D.

Subscription price - - Twelve dollars per annum in advance
Cable Address - - - - "Medic, Chicago"
SATURDAY, JUNE 24, 1950

A. M. A. ADVERTISING PROGRAM

The Board of Trustees and the Campaign Coordinating Committee of the American Medical Association have approved unanimously a nationwide advertising program which will include newspapers, magazines and radio. This is a new phase of the National Education Program to promote voluntary health insurance plans and to prevent politically controlled socialized medicine.

The advertising campaign will be launched in October. The total advertising budget is $1,110,000, of which $560,000 has been allocated to newspapers, $300,000 to radio and $250,000 to national magazines. Every bona fide daily and weekly newspaper, approximately 11,000, will carry copy during the week of October 8. Approximately 70 inches will be reserved in each paper. About 30 of the leading national magazines and many advertising trade publications will be included in the magazine advertising, and some 300 radio stations, covering every state, Hawaii and Alaska, will offer "spot announcements."

An announcement from the office of the A. M. A.'s National Education Campaign reads:

"The American Medical Association is embarking on a nationwide advertising program for two reasons. First, it is determined to aid in every way possible in increasing the availability of good medical care to the American people through the medium of voluntary health insurance. In that respect, the advertising copy will be designed to make the American people 'health insurance conscious' and to encourage the extension and development of prepaid medical and hospital care as a means of taking the economic shock out of illness. Second, American medicine is determined to alert the American people to the danger of socialized medicine and to the threatening trend toward state socialism in this country.

"The ad copy, in part, will be designed to sell a commodity, voluntary health insurance, but not any particular brand or plan. The individual will be encouraged to secure sound coverage in the plan which he feels best suits his individual needs. In its second aspect, the ad copy will be used to mobilize public opinion in support of a basic American ideal—the principle of individual freedom, as opposed to the alien philosophy of a government-regimented economy."

Some members of the medical profession and others may look with askance at any efforts of the profession to resort to advertising. However, the projected program is not advertising in the normal sense; it is not intended to permit preening in the light of self accomplishment. It is intended to forcefully convey information to everyone who should be interested in health. Briefly, the campaign is intended to relieve the medical profession of the need for a continuing exhaustive campaign and to find a way to bring the issue of government-controlled medicine to a public conclusion, to crystallize general public sentiment into concrete public certainty and to solidify the confidence of the public in the medical profession and to focus attention on what the profession has done and can do without government domination.

If physicians have confidence in their own leadership —local, state and national—and their ability to solve their problems, they can continue the spectacular job they have done in aiding medical progress and in holding back the forces which would shackle the medical profession and bring the general population to its knees before bureaucrats. From past experience physicians have shown themselves capable of approaching practically their problems. They now are faced with a need for similar understanding. With their support the new phase of the National Education Campaign will reach its objectives. And the campaign should have the support of every physician. If there are questions on the part of members, they should be forwarded to their local or state societies or to the American Medical Association for answer. These questions, if troublesome, should not be left unanswered, as there is too much at stake for the people of this nation.

ANTIHISTAMINES FOR COLDS

Several months ago the Council on Pharmacy and Chemistry analyzed the published data for the use of antihistaminic agents for colds.[1] At the same time THE JOURNAL criticised some of the promotional efforts to promote these remedies as cures and as abortive and preventive measures.[2] Evidence at that time was lacking to justify such promotional ballyhoo.

Nevertheless the Council and THE JOURNAL were roundly berated for expressing their beliefs. An editorial in *Collier's* magazine was particularly critical of these efforts to bring some sanity into the advertising claims. The editorial was so phrased that the majority of its readers would be left with the thought that the editorial writer at least believed that the criticisms from the American Medical Association were based on greed, that they had been offered in an attempt to prevent

1. Status Report on Antihistaminic Agents in the Prophylaxis and Treatment of the Common "Cold," Report of Council on Pharmacy and Chemistry, J. A. M. A. **142**: 566 (Feb. 25) 1950.
2. Antihistaminics for Colds, editorial, J. A. M. A. **142**: 570 (Feb. 25) 1950.

persons with colds from deserting their physicians for these new pills. Such an unjustified and unfair attack seemed hardly appropriate in a magazine which, so far as we know, is not generally regarded as a source of information on medical diagnosis and treatment for physicians.

Soon after the Council's findings were published the Federal Trade Commission was announced to have issued critical statements against the type of advertising which THE JOURNAL had denounced. We hope that the Council's and THE JOURNAL's critics have seen the recent announcement in the press to the effect that five heavily advertising promoters of antihistaminics for over-the-counter sale have agreed not to advertise that their products will cure or prevent colds. These firms are alleged to have "been accused of using 'false and misleading' advertising" and in the future will sell their products only for their effect on cold symptoms—for which many preparations already have been sold for years.

INCLUSION BODIES DISEASE

Jesionek and Kiolemenoglou and Ribbert reported finding (1904) protozoon-like cells in the kidneys, lungs, liver and the parotid glands in isolated instances of stillborn infants. Goodpasture and Talbot described in 1921 similar cells in the lungs and kidneys of a child dying at 2 months of age with bronchopneumonia, traced their origin to altered tissue cells and drew attention to their resemblance to the affected cells in salivary gland disease of guinea pigs. Von Glahn and Pappenheimer reported in 1925 a case of intranuclear inclusions in the intestine, liver and lungs of a 36 year old man. Farber and Wolbach found 26 instances of inclusion bodies in 183 consecutive autopsies on infants less than ½ year of age. The inclusion bodies were confined to the salivary glands in 24 and were found in various viscera in 2.

McMillan [1] reported a case of fatal inclusion disease pneumonitis in an adult, bringing the total incidence of inclusion disease in adults reported in the literature to 9 cases. Cappell and McFarlane [2] observed in the tissues of 2 infants, dead from hemolytic disease of the newborn, widely distributed intranuclear and cytoplasmic inclusion bodies. The lesions were morphologically identical with those attributed to the action of salivary gland virus of rodents and other animals. The widespread lesions found in these infants, by analogy with the experimental transmission of the salivary gland virus in animals, were probably due to dissemination of a human strain of salivary gland virus. These 2 cases are the first examples of hemolytic disease of the newborn associated with inclusion bodies in which the blood groups of mother and child have been fully investigated. No blood group incompatibility was detected in them, and attempts to demonstrate irregular antibodies in the maternal serum were unsuccessful, not only against the cells of the affected infant but also against the father's and a large panel of known cells.

Wyatt and his co-workers [3] report on 6 fatal cases of inclusion disease in infants, bringing the total number of cases in the literature to 64. They believe these inclusion cells to be the primary cause of death rather than an incidental finding. The outstanding pathologic change noted in all 6 cases was the presence of the inclusion-bearing cells. There was a widespread visceral involvement in all, the most conspicuous damage being found in the kidneys, liver and lungs.

The distinctive features of the morphologic diagnosis of this disease, according to these authors, are as follows: (1) occurrence of nuclear and cytoplasmic inclusions; (2) specific cellular gigantism, with cells measuring up to 35 microns in diameter; (3) nuclear inclusions, huge, granular, acidophilic or metachromatic, usually single, never more than two in a single nucleus and surrounded by a pale halo, with prominent margination of nuclear chromatin and often two distinct marginal polar bodies; (4) cytoplasmic inclusions, numerous and frequently localized in one portion of the cell, basophilic, uniform in size (2 to 4 microns in diameter) and spherical; (5) pronounced polymorphism of affected cells and their nuclei, with inclusions following the irregular contour of the nuclei, and (6) location largely in epithelial structures, such as bronchial epithelium, liver cells, bile duct cells, renal tubular epithelium and less often in adrenal, gastrointestinal epithelium (apparently the commonest location for adults), pancreas, thyroid and parathyroid.

The occurrence of the disease in stillborn and premature infants suggests that the infection is acquired from the mother during intrauterine life. The virus probably is present in a latent form in many adults and frequently localizes in the salivary glands of infants in utero. The inclusion bodies are regarded as strongly suggestive of reaction to a virus. Nuclear inclusions have been observed in the tissues of man and animals subjected to the toxic actions of heavy metals. The resulting inclusions, however, do not resemble closely the inclusions described, particularly in the absence of characteristic basophil cytoplasmic granules. Of all the lesions associated with inclusion bodies the only ones which show cytomegaly, intranuclear and cytoplasmic changes identical with those in the organs of infants are the salivary gland virus diseases of rodents and monkeys.

In some of the lower animals similar nuclear and cytoplasmic inclusions are constantly associated with the presence of a serially transmissible virus infection which in certain circumstances has fulminating lethal powers. This virus infection in lower animals, as in human beings, is latent in salivary gland tissue, and whenever

1. McMillan, G. C.: Fatal Inclusion-Disease Pneumonitis in an Adult, Am. J. Path. **23**: 995 (Nov.) 1947.

2. Cappell, D. F., and McFarlane, M. N.: Inclusion Bodies (Protozoon-like Cells) in the Organs of Infants, J. Path. & Bact. **59**: 385 (July) 1947.

3. Wyatt, J. P.; Saxton, J.; Lee, R. S., and Pinkerton, H.: Generalized Cytomegalic Inclusion Disease, J. Pediat. **36**: 271 (March) 1950.

the salivary glands contain the inclusions they also contain the virus, which can be transmitted serially in animals of the same species by intracranial inoculation.

Clinical diagnosis at present is probably not possible. The possibility of clinical confusion of the disease with hemolytic disease of the newborn infant is evident. Although inclusion disease may give rise to jaundice, bleeding tendencies and erythroblasts in the peripheral blood, there is no evidence that it is etiologically related to blood group incompatibility. The 2 cases of Cappell and McFarlane demonstrated that they are not necessarily etiologically related. Wyatt and co-workers suggest that studies of exfoliated cells in the urine of infants suspected of having generalized cytomegaly inclusion disease might offer a particular method of diagnosis.

These authors conclude that the causative agent of the disease is a specific virus, which, per se, is a common cause of fetal and infantile death. The morphologic and cytologic findings of the inclusion-bearing cells are pathognomonic of the disease. In uncomplicated cases death may result from viral pneumonia, viral nephrosis, viral hepatitis, viral enteritis or viral toxemia per se.

The fact that under experimental conditions the animal salivary gland viruses can give rise to generalized lesions, and that such generalization is more readily induced in the fetus than in the adult, lends support to the suggestion that the generalized lesions of infants may be due to dissemination of this virus. Despite the evidence available, there remain many unsolved problems in the relationship between the morphologic changes and the intracellular localization of the virus.

Current Comment

INAUGURATION OF THE A. M. A. PRESIDENT IN SAN FRANCISCO TO BE BROADCAST

For the first time in the history of the American Medical Association the inauguration of the new president, which will take place on Tuesday, June 27, at the San Francisco meeting of the Association, will be broadcast. The program will be carried over two large radio networks, the Mutual Broadcasting Company and the National Broadcasting Company. The inauguration ceremony will take place at 6 p. m., Pacific Standard time, at the Palace Hotel. The House of Delegates will be in session during the half-hour broadcast, which will be heard by millions of listeners all over the country. The House will be called to order by Speaker F. F. Borzell, and there will be brief addresses by Louis H. Bauer, Chairman of the Board of Trustees, and Ernest E. Irons, the retiring President. Dr. Elmer L. Henderson, the incoming President, will deliver a twenty minute address of national significance. The program will be closed with the presentation of the annual A. M. A. Award for Distinguished Service, after the recipient has been selected by vote by the House of Delegates when it meets on Monday, June 26. Advance newspaper publicity and letters will permit all practicing physicians in the United States to learn the time at which the program can be heard in their localities.

"M.D.—THE U. S. DOCTOR"

An unusual attraction for physicians attending the San Francisco meeting of the American Medical Association will be a premier showing of the documentary film "M.D.—the U. S. Doctor." This film will be at the Esquire Theatre, 934 Market Street, San Francisco. Produced by the well known Louis de Rochemont (March of Time, Fighting Lady, House on 92nd Street, Boomerang, Lost Boundaries), "M.D.—the U. S. Doctor" is the first of a new series known as "The Reader's Digest on the Screen." It depicts the state of the nation's health by reviewing medical progress, tracing the education required for a physician, highlighting the work and interests of the American Medical Association, revealing how research surges onward and describing the life of a rural general practitioner. This 39 minute film with 14 voices was made in close collaboration with the American Medical Association and is one of the most searching portrayals ever made of medicine. It will not be released in other theaters until the fall. While it is intended for the general population, it should be seen by all physicians. Without doubt it is one of the most engrossing documentary films ever developed in this field. The narration, the choice of scenes and other aspects reflect the care with which Louis de Rochemont prepares his work and reveals the basis for his reputation as a master in the documentation of real people and for exploring photographically the lives of professional persons. De Rochemont's latest effort should reveal convincingly to the people the remarkable medical care enjoyed by this nation and also the reasons for it.

THE BRITISH HEALTH SERVICE

Those who are watching the functioning of the British Health Service will be interested in an advertisement which appeared in the English magazine *Punch*. A recent issue contained an advertisement for the British United Provident Association which bears the caption "Which Would You Choose in the Event of Illness?—Private Treatment or General Ward!" with the text "The National Health Service ensures that everyone receives medical and, if necessary, hospital treatment in the event of illness or operation. To many people however, the necessary formalities, the waiting, and, finally, treatment in a general ward, are disconcerting both in anticipation and in practice."

The advertisement also reads, "The British United Provident Association offers an inexpensive alternative. For a moderate annual subscription, graded to suit individual means and requirements, members can make their own arrangements for speedy and private treatment in nursing home or hospital paybed and the whole or major portion of the expenditure is refunded by B. U. P. A." Apparently there is sufficient—and we hope increasing—interest in encouraging private enterprise to provide a service superior to that which a government can offer for health service.

WASHINGTON NEWS

Congressional Hearings

Congressional consideration of Reorganization Plan 27, which would make the Federal Security Agency into a Department of Health, Education and Security, got an unexpected early start. The House Expenditures Committee, acting before the Senate Committee, on June 14 announced it would start hearings on plan 27 and several other reorganization plans the next day.

However, because no witnesses could be obtained on such short notice, consideration of plan 27 was postponed to June 19, when the testimony of witnesses would be put into the record. To a large extent arguments are a repetition of last year's hearings on plan no. 1.

Unless either House rejects plan 27 by July 31, it will automatically become effective.

When he submitted plan 27, President Truman stated, "A principal criticism of the 1949 plan was that, in centralizing all statutory authority in the secretary . . . the plan threatened in matters of health and education unduly to subordinate professional judgment to nonprofessional domination. The present plan is not open to this criticism." In an attempt to answer this criticism, in the present plan Mr. Truman would move over into the new department the statutory authority of the Surgeon General, as well as that of the Commissioner of Education. However, an examination of the plan shows the way is still left open for "nonprofessional domination" in health matters.

Specifically, there is no requirement that any top executive of the proposed department be a doctor of medicine. No qualifications whatever are required of the Secretary of the new department, who would be a political appointee. Under him, the chief executive for medical services would be the Surgeon General, who need not be a doctor of medicine. Reorganization Plan 27 merely states that the Surgeon General must have "professional qualifications, training and experience appropriate to the duties of his office." This wording would permit nomination of any other person in the health service fields who was regarded by the President as possessing appropriate "professional qualifications, training and experience." In such an event, if the Senate did not reject the nomination the medical profession would be left without representation in the new department's policy making. Such a situation is distinctly possible under plan 27. Also, the proposal this year drops the requirement that the Surgeon General must come from the commissioned ranks of Public Health Service.

Senator Herbert O'Conor, Maryland Democrat and member of the Expenditures Committee, which considers reorganization plans, announced his opposition. Senator O'Conor based his objections mostly on the fact that plan 27 does not carry out recommendations of the Hoover Commission on reorganization.

"I vigorously opposed a similar plan last year," the Senator's statement said, "because I was convinced the all-important activities in the field of health and education should not be placed under a political appointee, who more than likely would be not too well versed in either field. Particularly was I fearful that the creation of such a department would be the opening wedge in the handling of health affairs which would lead eventually to socialized medicine in one form or another."

Senator O'Conor also fears that the changes proposed in health administration might not be in the public interest, and he sees no justification on the basis of efficiency or economy.

For two days prior to taking up plan 27, the House Expenditures Committee held hearings on H. R. 5182, which would nullify much that plan 27 seeks to accomplish. H. R. 5182 proposes a United Medical Administration, grouping in one organization virtually all federal health and hospital activities —military, Veterans Administration and Public Health.

The Committee heard three witnesses, all opposed to the bill, and received two statements, one in opposition and one (from the comptroller general) which made no recommendation.

Spokesmen for Veterans Administration and the Veterans of Foreign Wars traced in detail the history of veterans care, starting prior to World War I. They pointed out that creation of a joint medical administration would undo all the good accomplished when all veterans affairs originally were brought together under VA. VA Administrator Carl R. Gray Jr. declared, "The proposal runs counter to the historic policy of our government to treat its veterans as a class, deserving of special consideration, through one agency charged with the responsibility, to the extent possible, of administering all of their various benefit programs."

Gen. Gray and Col. George E. Ijams, V.F.W. representative, both emphasized that, under H. R. 5182, VA still would be required to authorize medical benefits but that the veterans would have to go to another agency—United Medical Administration—for treatment.

Dr. Eli Ginzberg of Columbia University, frequent adviser to the government on health and hospitals, argued that military medicine would suffer if grouped with the other medical services. In defense of the military, he said wartime medical procurement practices were justified.

Marvin L. Goldberger told the Committee that AMVETS preferred an interagency commission (military, VA and PHS) with authority to allocate hospital sites and beds, establish minimum medical and hospital standards and handle intern and resident programs. In other respects the commission's role would be advisory.

Voluntary health insurance plans—particularly new and small ones—have certain unavoidable shortcomings. They must, to some extent, eliminate or limit coverage in cases of certain chronic and costly illnesses, such as mental disease, cancer and tuberculosis. To correct the situation, Representative Charles A. Wolverton (Republican, New Jersey) has introduced a bill for reinsuring voluntary, nonprofit plans against the high costs of catastrophic illness. The objective is to make it possible for these plans to write unlimited coverage policies. Briefly, these are the provisions: Insured plans would recover from a federal corporation two thirds of all payments in excess of $1,000 per year to any one subscriber. A subscriber would be required to pay $1 a day toward his hospital bill and to pay for all office calls in excess of 12 per year. A fee schedule would be worked out, but the physicians could charge up to 25 per cent in excess of the schedule. The federal corporation would collect 2 per cent of the gross premium payments received by an insured association, which would be matched by direct congressional appropriation. The system would be started by a direct appropriation of $50,000,000 and Congress annually would appropriate money for administrative costs unless the corporation showed enough profit to cover them. On the positive side, Mr. Wolverton's plan represents the collective thought of a group of persons who have been concerned with the problems of health insurance, including Harold Stassen. On the negative side, his bill is not a cure-all. For example, it carefully excludes commercial companies, which would greatly limits its scope. Also, it does nothing to protect insured associations against financial difficulties not the result of catastrophic illnesses.

Opposition to Truman's Reorganization Plan

The Citizens Committee for the Hoover Report, a private, nonprofit group dedicated to work for better national government, is the first large organization officially to announce its opposition to President Truman's Reorganization Plan No. 27.

One week after Mr. Truman sent this plan to Congress, the Hoover Committee released an analysis of the proposal, which said the plan ran counter to Hoover recommendations "in several major respects."

Reorganization Plan No. 27 would make the Federal Security Agency into a cabinet rank Department of Health, Education and Security, presided over by a secretary under whom would serve a surgeon general and commissioners of education and security. At hearings last year, the American Medical Association opposed a similar plan (no. 1), which the Senate defeated. A. M. A. witnesses pointed out that the American Medical

Association for more than 50 years has advocated an independent department of health.

In its analysis, the Hoover Committee says: ". . . this plan provides for continuation of medical activities in the new department. This is counter to the Hoover Commission recommendations for creation of a united medical administration independent of any department. Recommendation no. 1 of the Hoover Report on Medical Activities states: 'To accomplish these purposes (reorganization of federal medical activities) the Commission recommends the establishment of a United Medical Administration into which would be consolidated most of the large scale activities of the federal government in the fields of medical care, medical research and public health (in which we include preventive medicine).'" The committee endorses the idea of making FSA into a department but reiterates its opposition to inclusion of health activities with education and security.

In submitting plan no. 27 to Congress, Mr. Truman made one change in the health structure, in deference to opposition raised last year. He specified that statutory authority of the surgeon general and the commissioner of education would be transferred into the new department, giving these officials a somewhat autonomous position.

While this modification might win some support elsewhere, it only served to stir up more opposition from the Hoover Committee. On this point the committee declares:

"The plan diverges sharply from the Hoover Commission principle that responsible and accountable administration requires vesting statutory authority in the department head. It accepts the theory of the Taft-Fulbright Bill with its provisions for autonomous bureaus. Under plan 27 the surgeon general (the Public Health Service) and the commissioner of education (Office of Education) retain all statutory authority and duties now vested in them. In other words, the new department would be a 'holding company' type of department.

"This method of administrative management is counter to the principle of organization set down as recommendation no. 14 in the Hoover Report on General Management of the Executive Branch."

The committee also objected because plan 27 does not include the Bureau of Indian Affairs in the new department and because it does not properly locate drug and food regulatory functions of the federal government.

After reserving his decision for a week, the Republican leader, Senator Robert A. Taft of Ohio, announced he was opposed to plan 27 and gave his reasons. "The difficulty is that Health, Education and Security are all different subjects," he said. "On the local level in cities they are entirely separate departments. The only respect in which they are grouped together in the present Federal Security Agency is that they all are matters in which the federal interest is secondary and the matter of principal interest is aid to states."

The Senator recalls that a similar plan was turned down by Congress last year because it did not conform to the Hoover recommendations, which call for an entirely separate medical administration. "That's been the great issue," Senator Taft says. "The welfare people, like Oscar Ewing, want to run health as a kind of welfare service. The doctors and others feel that medical care and health is a subject which ought to be dealt with by people expert in the health field and not subject to welfare direction." This situation has not been changed in the new plan, and he concludes that "the difficulty with the plan is the same as the difficulty with the plan last year." Senator Taft also notes that the secretary and his two top assistants are likely to be welfare people and that it "isn't perfectly clear that all the health functions have to be assigned to the Surgeon General of the Public Health."

The Republican leader believes the plan will be defeated, because of the aforementioned objections and because it would likely make a cabinet secretary of Mr. Ewing, about whom "there is a good deal of resentment in Congress."

In an attempt to sound out congressional sentiment in advance, the Administration contacted a number of senators before sending plan 27 to Capitol Hill. As part of this effort, Mr. Ewing talked over the idea with Senator Taft. To date it is not known whether the Administration was more successful with others than with Senator Taft.

Final action on H. R. 5940, providing federal assistance to medical and other health service schools, still is in doubt. Currently the full House Interstate and Foreign Commerce Committee is holding closed hearings on this bill, which was passed by the Senate, reported out once by this committee, but subsequently drastically amended by the House Health Subcommittee. The full committee has been studying a recently drafted report on the problems of medical schools, prepared by Public Health Service and its advisory committees. However, if the committee acts this session it will have to do so without benefit of another survey in the same field being conducted by the A. M. A. and Association of American Medical Colleges. The committee has been informed that some information of this survey will be available in the near future, but probably not before Congress adjourns.

H. R. 6000

Two developments are worth watching during Senate debate on H. R. 6000, which would extend social security coverage and benefits. A small group of senators, led by Scott Lucas (Democrat, Illinois) and Francis J. Myers (Democrat, Pennsylvania), are pledged to do all they can to get replaced in the bill a section on permanent and total disability, which was dropped out by the Senate Finance Committee but is included in the bill as passed by the House. Their efforts will be energetically supported by organized labor and a number of other groups. A. M. A. does not oppose the bill but opposes the permanent and total disability section. Its witnesses told the Senate committee that establishing total and permanent disability insurance would impose a difficult relationship between doctor and patient and that the benefits would tend to encourage malingering among patients, with unfortunate effects on recovery and rehabilitation.

In the other direction, a small bloc, led by Senator Harry Cain (Republican, Washington) hopes to defeat the entire bill. Senator Cain wants action deferred this session, pending a comprehensive study of the entire social security system. He has proposed (S. Con. Res. 92) the appointment of a 16 member Social Security Commission to review the social security problem and recommend new policies. In a speech on the Senate floor, Senator Cain also called for an investigation of personnel in charge of social security activities.

The Townsend Plan

Sponsors of the Townsend Plan for old age pensions are taking new heart for two reasons. Some members of the Senate Finance Committee showed unexpected interest in the plan while considering the social security extension bill (H. R. 6000), and only 21 more signatures are needed on a petition to force a House vote on the Townsend idea. Townsend sponsors drew encouragement when some Committee members said they were interested in a pay-as-you-go social security system, with age the only determining factor for eligibility. There are some basic similarities between such a system and the Townsend plan, under which all persons over 60 would receive pensions, estimated at about $150. The Townsend sponsors' success with the House petition may be more apparent than real. Townsend bills have been before Congress since 1935. Each session a House petition is started; each time the names build up slowly, under political pressure; each time the last few names are difficult to round up, and if the total is too close some members quietly withdraw their names from the list. Only once has the House voted on the Townsend plan, in 1939, when it was defeated by 101 votes to 4.

Venereal Disease Case Load

Because its venereal disease case load has proved to be considerably less than anticipated, the Public Health Service is asking Congress to transfer $347,000 earmarked for this work. Various other projects are splitting up the sum, under a deficiency appropriations bill. In all, PHS is transferring $469,000. The bill also asks an additional $871,500, all to cover pay increases voted last year but not provided for in the original appropriation.

ORGANIZATION SECTION

Official Notes

Abstract of Minutes of Meeting of Board of Trustees Held May 28, 1950

The Board of Trustees met with the Coordinating Committee on Sunday, May 28, and, after approving for referral to the Board of Trustees a statement of policy submitted by Whitaker and Baxter, it took up matters which have been awaiting its attention.

All members of the Board, except Dr. McCormick, who was attending the meeting of the World Health Organization in Geneva, Switzerland, were present.

APPOINTMENTS

Dr. Walter J. Zeiter of Cleveland was elected to fill the unexpired term of Dr. John S. Coulter (deceased) on the Council on Physical Medicine and Rehabilitation.

Dr. Austin Smith succeeds Dr. R. L. Sensenich as representative of the American Medical Association to the Division of Medical Sciences of the National Research Council for a three year period.

Dr. L. W. Larson was appointed representative of the American Medical Association and Dr. H. P. Ramsey alternate on the Technical Advisory Committee on Blood of the National Security Resources Board.

The following appointments were made to the World Medical Association: Drs. E. E. Irons and F. F. Borzell, delegates; Drs. H. B. Mulholland and T. A. McGoldrick, alternates; Drs. G. F. Lull and William F. Braasch, observers.

EXHIBITS

Invitations were accepted to place exhibits at the meetings of the North Carolina Medical Society and the American Hospital Association, September 18-21.

1951 CLINICAL SESSION

Houston, Texas, was selected as the place of the 1951 Clinical Session of the Association, and the date set was December 4-7.

PUBLIC RELATIONS CONFERENCE

November 26 and 27 were selected as the dates for the Public Relations Conference to be held in Denver.

GIFT OF MEDICOLEGAL BOOKS

A gift of books from the medicolegal library of Dr. W. C. Woodward, formerly Director of the Bureau of Legal Medicine and Legislation, was acknowledged to his daughter, Miss Elinor Woodward.

BROCHURE ON MEDICAL EXAMINER'S SYSTEM

The Board agreed to act as co-sponsor with the National Municipal League of New York and the American Bar Association in the publication of a brochure on the medical examiner's system.

MICROFILMING OF ARCHIVES OF INTERNAL MEDICINE

The Board acquiesced in the request of UNESCO that permission be given to University Microfilms to microfilm volumes of the *Archives of Internal Medicine* from 1939 to 1945 for sale to foreign countries.

INDOCTRINATION COURSE FOR EXECUTIVE PERSONNEL FOR COUNTY AND STATE

The Secretary and General Manager was authorized to arrange for a course to be given in the headquarters office for the indoctrination of newly designated executive personnel of county and state societies.

EMPLOYMENT OF FIELD SECRETARY FOR COMMITTEE ON RURAL HEALTH

The employment of Mr. Aubrey Gates as field secretary of the Committee on Rural Health for a period of fifteen months was approved by the Board.

NATIONAL ASSOCIATION OF LIFE UNDERWRITERS INVITED TO SEND REPRESENTATIVES TO SAN FRANCISCO MEETING

The Board voted to extend an invitation to the National Association of Life Underwriters to send one or more representatives to the Annual Session of the Association in San Francisco.

NEW COMMITTEE ON MEDICOLEGAL PROBLEMS

The Committee to Study the Problems of Motor Vehicle Accidents and the Committee to Survey the Relationship of Medicine and Law, both of which have been dormant for some time, were discharged by action of the Board at this meeting, and a new committee, to be known as the Committee on Medicolegal Problems, was established. It will be composed of Dr. Alan Moritz, Cleveland, Chairman; Mr. J. W. Holloway Jr., Chicago, Secretary; Dr. Louis Regan, Los Angeles, and Dr. Herman A. Heise, Milwaukee. A fifth member undoubtedly will be appointed at a later date.

Coming Medical Meetings

American Medical Association, San Francisco, June 26-30. Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

American Proctologic Society, Los Angeles, July 1-5. Dr. W. Wendell Green, 1838 Parkwood Ave., Toledo 2, Ohio, Secretary.

Montana State Medical Association, Bozeman, Gallatin County High School, July 9-12. Dr. Herbert T. Caraway, 113 N. 28th St., Billings, Secretary.

West Virginia State Medical Association, White Sulphur Springs, The Greenbrier, July 27-29. Mr. Charles Lively, P. O. Box 1031, Charleston 24, Executive Secretary.

International Meetings

International Anatomical Congress, Oxford, England, July 25-28. Secretary, Miss A. M. Maynall, Department of Human Anatomy, University Museum, Oxford, England.

International Association for the Prevention of Blindness, London, England, July 17-21. Prof. P. Bailliart, 47 rue de Bellechasse, Paris, France, Chairman.

International Cancer Research Congress, Paris, France, July 17-22. Secretariat, 6 Ave. Marceau, Paris 8, France.

International College of Surgeons, Buenos Aires, Argentina, August 7-12. Dr. Max Thorek, 1516 Lake Shore Drive, Chicago, Secretary.

International Congress of Microbiology, Rio de Janeiro, Brazil, August 17-24. Dr. Olympio de Fonseca, Institut Oswaldo Cruz, Rio de Janeiro, Secretary.

International Congress of Ophthalmology, London, England, July 17-21. Mr. Keith Lyle, 43 Lincoln's Inn Fields, London W.C.2, England, Secretary.

International Congress of Radiology, London, England, July 24-28. Dr. J. W. McLaren, 43 Lincoln's Inn Fields, London, W.C.2, Secretary General.

International Pediatric Congress, Zurich, Switzerland, July 24-28. Dr. L. Emmet Holt Jr., 477 First Ave., New York City 16, Secretary-General.

International Society of Haematology, Copenhagen, Denmark, August 15-18. Dr. Martin Hynes, Cambridge University, England, Secretary.

International Society for the History of Medicine, Amsterdam, Holland, August 14-20. Professor, 58 Blvd. de la Croix-Rousse, Lyon, France, Secretary.

International Union Against Venereal Diseases, Zurich, Switzerland, July 29-Aug. 2. Dr. A. Cavaillon, Institut A. Fournier, 23 Blvd. St. Jacques, Paris 14em., France, Secretary.

State Legislation

Michigan

Bills introduced.—S. Res. 18-X proposes the appointment of a committee to conduct a study of the availability of medical care and hospital services in the state of Michigan and make a comparison of the results of this study with similar studies made in other states and to investigate other similar problems. S. Con. Res. 14-X proposes the appointment of a committee to study the mental health program of the state of Michigan so as to have intelligent planning before the expenditure of the dollars of the taxpayers in the construction of new mental institutions.

Bill enacted.—S. Con. Res. 18-X was adopted May 19. It provides for the appointment of a committee to study the question of the establishment of an equitable basis for state payment to hospitals for services rendered to crippled and afflicted children.

New Jersey

Bill enacted.—A. J. Res. 1. has become Joint Resolution Chapter 4 of the Laws of 1950. It provides for the creation of a New Jersey Medical College Commission to study the need for a medical college in New Jersey.

GOVERNMENT SERVICES

Army

Hepatic and Metabolic Center

The Army Hepatic and Metabolic Center, which carries on research against infectious hepatitis, was transferred from Valley Forge General Hospital, Phoenixville, Pa., to Walter Reed General Hospital, Washington, D. C., June 15. The function of the center is to gain information in the recognition and treatment of infectious hepatitis and research in the study of the liver. Hepatitis involved an estimated 55,000 military personnel in all theaters during World War II. Research director of the center is Dr. Victor M. Shorov, instructor in medicine at the University of Pennsylvania, research associate in medicine for the Jefferson Medical College, Philadelphia, and a member of the Association for the Study of Liver Diseases; First Lieut. Donald A. Sutherland, Army Medical Corps, is assistant clinical director.

The center was recently approved for training by the American Board of Internal Medicine; thus far, two physicians from the University of Pennsylvania and one from the Jefferson Medical College have been selected for training at the unit. A complementary unit exists at the 98th General Hospital in Munich, Germany; here acute cases of hepatitis and liver dysfunction, as well as field problems of epidemiology and the evaluation of new preventive and curative drugs, are studied.

Consultants Go to Europe

Dr. Richard S. Farr, professor of orthopedic surgery at Syracuse University School of Medicine, and Dr. S. Leon Israel, assistant professor of obstetrics and gynecology at the University of Pennsylvania Graduate School of Medicine, will go to Europe on June 28 as Army Medical Department consultants to spend 30 days advising and consulting with Army surgeons in the European command.

Test New Vaccine Against Scrub Typhus

An iced vacuum jug containing 20 cc. of a new type of scrub typhus vaccine has been sent to Kuala Lumpur, Malaya, for testing by an Army Medical Department team. Tests will be carried on to determine the effectiveness of the vaccine against typhoid as well as scrub typhus. The investigations are to be conducted at the site of the Army's first successful application of chloramphenicol (chloromycetin®). Studies are being made also to determine an optimum dosage and time schedule for the administration of synthetic chloramphenicol. Army personnel working on the Malayan field test include Major Robert Traub (MSC) of Alexandria, Va.; Capt. Herbert Ley Jr. (MC) of Silver Spring, Md.; Capt. Lyman P. Frick (MSC) of Takoma Park, Md.; First Lieut. Fred Diercks (MSC) of Chevy Chase, Md., and First Lieut. Vernon Tipton (MSC) of Mesa, Ariz. Dr. Joseph Smadel, director of the Virus and Rickettsial Department, Army Medical Department Research and Graduate School, led the team which conducted the original testing of chloramphenicol in 1948.

Selection of Site for Research Laboratory

The chairman of the Research and Development Board, William Webster, announced May 19 the election of Blake Van Leer, president of the Georgia Institute of Technology, as chairman of the ad hoc advisory committee for the selection of a site for an $11,000,000 Army Quartermaster research laboratory. The Secretary of Defense, Louis Johnson, who was authorized by Public Law no. 424, 81st Congress, to acquire land and construct buildings for the laboratory, will select the site on the basis of recommendations from the Research and Development Board. The laboratory will be used for research and development in the field of chemicals and plastics; environmental protection of man; physics, biology and chemistry; textiles, clothing and footwear, and mechanical products.

Navy

Course in Aviation Medicine for Reserve Officers

A course of instruction in aviation medicine for inactive reserve medical officers holding the designation of flight surgeon or aviation medical examiner will be conducted at the Naval School of Aviation Medicine, Pensacola, Fla., July 10-22. Only the 1st, 3rd, 4th, 5th, 6th, 8th, 9th naval districts, Potomac River Naval Command, and Chief Naval Air Reserve training have been assigned a limited quota for this course. Inactive volunteer reserve medical officers with the designation of flight surgeon or aviation medical examiner residing in the aforementioned naval districts, who desire to attend should submit their request for training duty to the commandant of their local naval district at the earliest possible date. Meals and sleeping quarters will be available at the Bachelor Officers Quarters for those who desire such accommodations. It is anticipated that two additional courses in aviation medicine will be given at a later date.

Graduate Training

The following medical officers have been nominated for instruction under the Navy's Graduate Training Program:

Comdr. De Salva G. Du Vigneaud, to instruction in children's orthopedics, St. Charles Hospital, New York.

Lieut. Alan Raftery, to instruction in pathology, Armed Forces Institute of Pathology, Washington, D. C.

Lieut. John E. Deming, to a residency in obstetrics and gynecology, Tripler General Hospital, Oahu, Territory of Hawaii.

Lieut. (jg) John C. W. Campbell, to a residency in pediatrics, Naval Hospital, Philadelphia.

Lieut. (jg) Hal T. Hurn, to instruction in psychiatry, St. Elizabeth's Hospital, Washington, D. C.

Lieut. (jg) Edward M. Smith Jr., to a residency in obstetrics and gynecology, Naval Hospital, St. Albans, N. Y.

Navy Orders 17 Women Doctors to Active Duty

The first 17 women doctors to complete their medical internships under the Navy civilian intern training program have received orders to report this month to naval hospitals and dispensaries in the United States for 24 months of active duty. The 17 women, who are now completing their internships at civilian hospitals, hold commissions as lieutenants (junior grade) in the Medical Corps, U. S. Naval Reserve. They will join two regular Navy and three Naval Reserve women doctors now on active duty.

The new Navy women doctors are:

Ruth M. Allen, of Norfolk, Va.
Helen W. Anderson, of Philadelphia
Eleanor E. J. Bundy, of Decatur, Ga.
Barbara J. Call, of Salem, Mass.
Anna E. Connell, of Lufkin, Texas
Julia M. Cullen, of Buffalo
Margrethe D. Johnson, of Portland, Ore.
Betty J. Kizer, of Fairmount, Ill.
Elizabeth L. McGee, of Media, Pa.
Margaret L. McGrath, of Crafton, Pa.
Virginia M. Norrell, of Wheaton, Ill.
Sara J. Parks, of State College, Pa.
Patricia L. Pear, of Salinas, Calif.
Shirley J. Peterson, of Park Ridge, Ill.
Ruth L. Stout, of East St. Louis, Ill.
Mildred V. Toggle, of Atlanta, Ga.
Irene M. Vrabel, of Fair Lawn, N. J.

Personal

Lieut. Comdr. Harry L. Day (MC, USNR), of New Haven, Conn., is being recalled to active duty at his own request and will be assigned to the Naval Hospital, St. Albans, L. I., New York.

Lieut. Joseph S. Burkle, in a residency in internal medicine, Naval Hospital, and Lieut. William R. Walsh, on duty at the Naval Hospital, St. Albans, L. I., New York, have elected to transfer from an active reserve status to the Medical Corps of the regular Navy.

Veterans Administration

Dedicate Roosevelt Hospital for Mental Patients

The Franklin Delano Roosevelt Hospital at Crugers, N. Y., built by the Veterans Administration at a cost of $25,000,000 for the treatment of mentally ill veterans, was dedicated May 21. Thousands of persons attended the ceremonies and toured the buildings and grounds of this new 383 acre institution, which is scheduled for completion this fall. At the time the hospital was dedicated, 175 veteran patients had been transferred to this hospital from other veteran hospitals and 11 doctors and 40 registered nurses were on duty as part of the staff. Neuropsychiatric veteran patients will be admitted only from parts of New York, Connecticut, New Jersey and Pennsylvania. The capacity of the hospital will be 1,965 patients. Among the 36 buildings are two for cases of acute illness and one for cases of semiacute illness, five for continued treatment, one for women patients, the main clinic, occupational therapy building, gymnasium with swimming pool, recreation hall, theater, chapel and utilities building. Dr. Richard B. Harris, who presided at the dedication ceremonies, is the manager, and Dr. Arnold A. Shillinger is chief of professional services. The principal speaker was Major Gen. Carl R. Gray Jr., administrator of veterans affairs.

Meeting of "Grass Root" Representatives

Representatives of 38 national organizations that aid the Veterans Administration program on the voluntary basis met in Washington, D. C., May 25-26. "Grass root" representatives will attend the meeting for the first time since this voluntary service was organized after World War II. This, the tenth meeting of the group, will be held in the Departmental Auditorium on Constitution Avenue between 12th and 14th streets, N. W. The men who will address the meeting will be Carl R. Gray Jr., Administrator of Veterans Affairs, Dr. Arden Freer, deputy chief medical director, and Dr. Roy A. Wolford, assistant chief medical director for professional services. The subject of the conference will be "Veterans Administration Voluntary Service Plan in Operation." These community leaders and VA hospital staff members will evaluate the volunteer work of the program.

Franklin Delano Roosevelt Veterans Administration Hospital

Personal

Dr. Ernest V. Edwards, a veteran of both World Wars, and formerly in private practice at Mayfield, Ky., will become manager of the VA hospital at Long Beach, Calif., when the VA takes over the hospital from the Navy.

Miscellaneous

Training in First Aid by Bureau of Mines

More than 1,700,000 workers in the mineral and allied industries have received first-aid training from the Bureau of Mines, U. S. Department of the Interior, in the 39 years since the Bureau was organized, James Boyd, director, said May 12. This training, he added, represents only one phase of the many-sided program of investigation and research, education and training and (since 1941) coal mine inspections, through which the Bureau has carried out its mandate to promote safety and health in the mineral industries since 1910.

MEDICAL NEWS

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

COLORADO

Rabies Control Program.—The State Board of Health has tightened regulations on bringing unvaccinated dogs into the state to prevent a recurrence of the importation of rabies. The regulation states that "All dogs imported into the State of Colorado by any method and for any purpose whatsoever shall be accompanied by an official health certificate issued by a veterinarian approved by the state of origin. Such certificate shall state that the dog is in good health and free from contagious, infectious or communicable disease, also that such dog has been immunized against rabies not less than thirty days, nor more than twelve months, prior to the date of entry into Colorado, and within the past twelve months the disease rabies has not existed within the fifty-mile radius of the point of origin." A permanent control program requires that there be constant control of stray dogs and immunization of owned dogs. To aid communities in effecting such a program, Martin D. Baum, D.V.M., Denver, director of public health veterinary services, is drafting a model ordinance requiring a continuing immunization program. This will be sent to every city council in Colorado. Attention was drawn to the rabies in the four county areas comprising Metropolitan Denver in which 55 cases were reported from January 1 to March 18 (THE JOURNAL, April 22, page 1303).

CONNECTICUT

Dr. Winternitz to Retire.—Dr. Milton C. Winternitz, professor of pathology and formerly dean of the Yale School of Medicine, New Haven, will retire on June 30 after 33 years of teaching on the Yale faculty. He will continue as director of the Board of Scientific Advisers of the Jane Coffin Childs Memorial Fund for Medical Research, with offices in the Sterling Hall of Medicine. During the 15 years that he served as dean he directed the rebuilding and the expansion of the Yale School of Medicine, liberalized the curriculum and revitalized research. Dr. Winternitz received his M.D. degree from Johns Hopkins University in 1907, where he served as a fellow, assistant, instructor and associate professor of pathology. He was also pathologist of the Baltimore City Hospital. In 1925 he was named Anthony N. Brady professor of pathology. Commissioned as a captain in the medical reserve corps in 1918, Dr. Winternitz was placed in charge of the subcommittee on medicine and related problems, Research Council of the Chemical Corps Advisory Board at the Army Medical Center, Edgewood, Maine. He was discharged with the rank of major. He was appointed dean at Yale in 1920.

ILLINOIS

Teaching Awards.—Fourth year students in the University of Illinois College of Medicine have presented Drs. Carroll L. Birch and Francis L. Lederer with the Raymond B. Allen instructorship awards for the 1949-1950 school year. The awards, designed to honor excellency in individual instructorship rendered by faculty members to students, were given to Dr. Birch for preceptive instruction and to Dr. Lederer for clinical teaching. Dr. Birch also received the award presented by the second year students. Third year students presented their awards to Dr. Philip Thorek for preceptive instruction and to Dr. Louis Feldman for clinical instruction. Otto A. Bessey, Ph.D., received the award from first year students. Each of the winners received a key in the form of a golden apple. Their names will be placed on the permanent plaque which hangs in the Chicago Illini Union. The awards were presented by the Student Council of the College of Medicine.

Chicago

Personals.—Dr. Vincent J. O'Conor, head, department of urology, Northwestern University Medical School, will be the guest speaker at the annual meeting of the Australasian Urological Society in Brisbane, Australia, July 22-26. Dr. O'Conor will also address the College of Surgeons in Sidney and in Melbourne.——Dr. Arnold D. Tuttle, (MC, USA, retired) received the annual Alumni Honor Award and gold key of the School of Medicine of the University of Maryland on June 9. Dr. Tuttle, medical director of the United Air Lines, was cited for his contributions to aviation medicine.

Dedicate Goldblatt Hospital for Cancer Research.—The Nathan Goldblatt Memorial Hospital of the University of Chicago was dedicated June 15. The $2,200,000 hospital was initiated in 1946 with a million dollar gift from the Goldblatt Brothers Foundation. Chancellor Robert M. Hutchins, President Ernest Cadman Colwell and investigators in the field of cancer from the university and other research centers spoke at the dedication ceremony. Dr. Clarence Cook Little, director of Jackson Memorial Laboratories, Bar Harbor, Maine, guest speaker at a luncheon at the Quadrangle Club, spoke on "Insuring the Future of Cancer Research"; other speakers were Dr. Charles B. Huggins, professor of urology, and Maurice Goldblatt, president of the University of Chicago Cancer Research Foundation. Among those on the dedication program were Dr. Leonard A. Scheele, surgeon general, United States Public Health Service, Dr. Lowell T. Coggeshall, dean of the division of biologic sciences, and Maurice Goldblatt. Speakers on the scientific panel were:

William U. Gardner, Ph.D., New Haven, Conn., Hormonal Imbalance and Experimental Tumorigenesis.
Linus C. Pauling, D.Sc., San Francisco, Molecules—Our Friends and Enemies.
Choh H. Li, Ph.D., Berkeley, Calif., Hormones of the Adrenal Cortex.

The Nathan Goldblatt Memorial Hospital will be headquarters of the program of investigation of cancer. A $650,000 grant from the U. S. Public Health Service and public contributions completed the balance of the construction costs. The center is reported to be the only university hospital in the world with a clinical staff working full time on investigation, teaching and care of patients within the hospital and outpatient departments. Scientists from 13 departments and the atomic institutes cooperate in the work of the hospital.

MARYLAND

State Medical Election.—Officers for the coming year for the Medical and Chirurgical Faculty of the State of Maryland include: Dr. Walter D. Wise, president; Dr. George H. Yeager, secretary, and Dr. J. Albert Chatard, treasurer. Delegate to the American Medical Association (1951 and 1952) is Dr. Warde B. Allen, with Dr. Louis H. Douglass as alternate. The delegate for 1950-1951 is Dr. John Warner Parsons, with alternate Dr. Benjamin S. Rich, all of Baltimore.

Deputy Director Appointed.—The State Board of Health has appointed Dr. Dean W. Roberts to the newly created position of deputy director of health. He has been a member of the state department of health staff since October 1943, when he became chief of the Bureau of Maternal and Child Health and then chief of the Bureau of Medical Services since its organization in 1945. A native of Georgia, Dr. Roberts received the degree of Doctor of Medicine from Emory University School of Medicine at Emory University, Ga., in 1940.

MICHIGAN

Rapid Treatment Center to Close.—The Michigan Rapid Treatment Center at Ann Arbor, which has handled 13,000 cases of venereal diseases during its six years of operation, will close its doors June 30. The closing is in line with the decentralization of public health responsibilities to local communities and with current retrenchment to fit Michigan Department of Health activities within its budget. The center was opened in July 1944 for treatment of patients referred by local physicians and clinics. Now the more general use of new drugs and methods make it possible for physicians to treat patients in about the same time as the Rapid Treatment Center. During the center's six years of operation reported cases of syphilis in Michigan have decreased from 17,000 or 18,000 a year to about 8,700 a year in 1949. The daily case load for the first half of 1950 averaged about 41 patients. With the closing of the center, control and treatment of venereal disease cases reverts to the local county, where it is placed by statute. Twenty-three venereal disease clinics are now operated by local health departments in the state. The Michigan Department of Health will assist in the control programs through the local health departments.

MINNESOTA

State Medical Meeting.—The Minnesota State Medical Association held its annual session in Duluth June 12-14 under the presidency of Dr. Frank J. Elias, Duluth. Guest speakers included:

Robert Elman, St. Louis, Massive Upper Gastrointestinal Hemorrhage.
Ralph A. Reis, Evanston, Ill., Obstetric Manikin Demonstration.
C. Rollins Hanlon, Baltimore, Advances in Surgical Treatment.
Eugene P. Pendergrass, Philadelphia, the Russell D. Carmen Memorial Lecture: Roentgen Diagnosis of Silicosis.
Armand R. Quick, Milwaukee, Common Hemorrhagic Diseases of Childhood.
Robert E. McDonald, Milwaukee, Dystocia.
Stephen Epstein, Marshfield, Wis., Skin Allergy, Newer Trends in Diagnosis and Management.
Stewart Wolf, New York, Psychosomatic Medicine.
Mr. Howard A. Carter, Chicago, Secretary, Council on Physical Medicine and Rehabilitation, American Medical Association, The Physics of Atomic Energy and the Geiger-Mueller Counter.
Col. Elbert DeCoursey, M.D., Washington, D. C., Medical Aspects of Atomic Explosion.
Col. Ernest B. Miller, St. Paul, Minnesota Program of Civil Defense and Disaster Relief.

The Arthur H. Sanford Lectureship in Pathology was presented by Ancel Keys, Ph.D., Minneapolis, on "Diet and Cardiovascular Disease." At the banquet Tuesday night Laurence M. Gould, Ph.D., Northfield, spoke on "Are We Ashamed of the Things That Have Made Us Great?" Both scientific and technical exhibits were shown.

MISSISSIPPI

Medical Student Scholarships.—The State Medical Education Board has conditionally approved a total of 22 loans for Mississippi medical students who wish to become family doctors in rural areas. The 22 students will start at six different medical schools: Mississippi, Duke, Jefferson, Tulane, Vanderbilt and Howard. The board calls attention to the deadline of August 15 for receipt of all applications except those from students planning to enter the University of Mississippi School of Medicine on July 31, who should file applications at once with the board office in Jackson.

MONTANA

State Medical Meeting at Bozeman.—The annual session of the Montana State Medical Association will be held in Bozeman July 9-12, under the presidency of Dr. Thomas F. Walker of Great Falls. Meetings of the House of Delegates of the association will be held Sunday and Monday, and the scientific sessions will convene Tuesday and Wednesday in the auditorium of the Gallatin County High School. The speakers at the scientific sessions will be: Drs. Edwin J. DeCosta, Walter L. Palmer and Peter C. Kronfeld, all of Chicago; Dr. Mynie G. Peterman, Milwaukee; Dr. Owen H. Wangensteen, Minneapolis, and William L. Jellison, Ph.D., Hamilton, Mont. The Woman's Auxiliary will hold its annual meeting at the Baxter Hotel. The Montana Chapter of the American Academy of General Practice and the Montana Obstetrical and Gynecological Society also will hold dinner meetings during the period of the state meeting. The Montana Academy of Oto-Ophthalmology will also meet at this time.

NEW YORK

Dr. Roach to Head Radiology Department.—Dr. John F. Roach, Baltimore, has been appointed professor and director of the department of radiology at Albany Medical College and radiologist in chief to the Albany Hospital, effective July 1. Dr. Roach was graduated from Harvard Medical School in 1939 and interned at the U. S. Naval Hospital in Philadelphia. He served during the last war. He has been associated with Johns Hopkins University School of Medicine as assistant professor of radiology and since 1948 as associate professor of radiology. He is co-editor of the Radiology Section of the *American Journal of Medical Sciences* and has acted as consultant in radioactive isotopes to the Veterans Administration Hospital, Fort Howard, Md.

Organize Medical Center Council.—The Albany Medical Center Council, a coordinating body to provide expert leadership on broad problems of medical education, public health and hospital care in the area, has been formed. Alfred Renshaw, president of Albany Medical College, has been elected chairman of the council, and Dr. Robert S. Cunningham, Albany, has been appointed executive director, secretary and treasurer. Other members are: Mr. Frank W. McCabe, president of Albany Hospital; Carter Davidson, LL.D., chancellor of Union College, Schenectady; Dr. Herman E. Hilleboe, Albany, state commissioner of health; Evan R. Collins, Ed.D., president of the New York State College for Teachers, Albany; James F. Adams, president of John A. Manning Paper Company of Green Island; Gates B. Aufsesser, chairman of the board of Mohawk Brush Company, and Dr. Thomas Hale Jr., director of Albany Hospital. Mr. Renshaw and Mr. McCabe said that need for the Albany Medical Center Council has been made urgent by these developments: In the past decade Albany Medical College, Albany Hospital and the affiliated institutions have been facing steadily increasing responsibilities with respect to medical education, public health and hospitalization which require decisions of an area-wide nature. The experience of forward looking medical centers in recent years has shown that in those areas where there is a high degree of coordination in medical education, public health and hospital care the council will bring the public the greatest health benefits. Although the function of the council is at present purely advisory, it is anticipated that it will be granted executive powers. Mr. Renshaw and Mr. McCabe said that Dr. Cunningham will continue as dean of the medical college until a new dean is appointed.

New York City

Personals.—Dr. J. A. Werner Hetrick received one of the first two honorary degrees ever presented by New York Medical College, Flower and Fifth Avenue Hospitals, at graduation exercises June 7. Dr. Hetrick, dean of the college, was commended for his service to his alma mater as a physician, administrator and medical educator for more than 25 years.—— Dr. Anthony J. Lanza, chairman, Institute of Industrial Medicine, New York University-Bellevue Medical Center, has been elected secertary of the board of directors of the New York Tuberculosis and Health Association. Dr. Lanza succeeds Mr. Myron I. Borg Jr., who resigned the office to become chairman of the association's executive committee.

Dr. De Sanctis Heads New Medical Board.—Dr. Adolph G. De Sanctis has been elected chairman of the newly created Medical Board of University Hospital, New York University-Bellevue Medical Center. He has been associated with University Hospital (the former New York Post-Graduate Hospital) since 1915 and is professor and chairman of the department of pediatrics, New York University Post-Graduate Medical School, and director of the department of pediatrics, University Hospital. He was president of the New York County Medical Society in 1937 and served in the Medical Corps of the U. S. Army in World War I. Election of the following additional officers of the medical board was also announced: vice chairman, Dr. S. Bernard Wortis, professor of neurology, Post-Graduate Medical School and director of the department of psychiatry and neurology of University Hospital, and secretary, Dr. Charles A. Poindexter, professor of medicine, Post-Graduate Medical School and attending physician, University Hospital.

Blood Transfusion Association.—Exercises celebrating its twenty-first anniversary and the opening of its new offices and laboratories at 178 West 102d Street were held June 7 by the Blood Transfusion Association. Dr. Benjamin P. Watson, president of the New York Academy of Medicine, was the principal speaker. Guests at the reception which preceded the exercises included more than 100 administrators, heads of medical boards and staff members of voluntary, proprietary and municipal hospitals in the New York area, as well as representatives of the New York City departments of health and hospitals, the United Hospital Fund and the American Red Cross. The new establishment includes two buildings, equipped to receive professional blood donors, process blood, prepare serum, make tests for the Rh factor and bank blood. The association was founded in 1929 under the auspices of the New York Academy of Medicine. Aided by a grant from John D. Rockefeller Jr., it began under the name of the Blood Transfusion Betterment Association of New York City. In conjunction with the American Red Cross in 1940 the association undertook the first large scale blood-banking plan, under which plasma was prepared here for use in England by both civilian and military personnel. A scroll was presented by Dr. De Witt Stetten, president of the association, to Dr. Arthur F. Coca, Oradell, N. J., who in conjunction with Dr. Edward H. L. Corwin was one of the pioneers in the formation of the association. Dr. Corwin, executive secretary, Committee on Public Health Relations, New York Academy of Medicine, has been managing director of the Blood Transfusion Association since its beginning. In his comments at the ceremonies Dr. Watson said: "At the present time it is estimated that in New York City an average of four

transfusions is being given per hospital bed per year, which means that with more than 40,000 hospital beds in the city we are transfusing 160,000 pints of blood every year. It has been estimated that before long this will reach 250,000 pints."

PENNSYLVANIA

O'Malley Award.—The Lackawanna County Medical Society presented Dr. Martin T. O'Malley, Scranton, with the society's Martin T. O'Malley Award in recognition of his outstanding service to the society and the community in the field of public relations. This award is to be presented not more than once a year and not less than once every five years to an outstanding local doctor. Three hundred and fifty persons representing 20 health agencies joined in honoring Dr. O'Malley.

Philadelphia

Jefferson Medical College Anniversary.—Jefferson Medical College is celebrating its one hundred and twenty-fifth anniversary. The seventh oldest of the country's medical colleges honored the memory of its founder, Dr. George McClellan, at a memorial luncheon in Philadelphia of the Newcomen Society of America and on other special occasions in the Commencement period. The college was formally opened on March 8, 1825. At that time Philadelphia, with 138,000 inhabitants, was the largest American city. A group of physicians led by McClellan succeeded in establishing a medical department of Jefferson College, a literary college located at Canonsburg in western Pennsylvania. This union was dissolved in a few years when Jefferson Medical College was granted a broad independent university charter. In the founding year McClellan started the first infirmary, which became immediately an adjunct for clinical instruction. This was the first clinic established in any college in the country. In some of the earliest classes Samuel D. Gross, the great surgeon, Washington L. Atlee, an abdominal surgeon, and J. Marion Sims, founder of gynecology, graduated. During the century and a quarter of the institution's history nearly 19,000 doctors of medicine have graduated to serve in all areas of the world. Over 6,000 of these graduates are living.

GENERAL

New Headquarters of Diabetes Association.—The American Diabetes Association has established new and permanent headquarters at 11 West 42d Street, New York 18. Its former address was 1 Nevins Street, Brooklyn 17.

Northwestern University Alumni Meeting.—The Alumni Association of Northwestern University will meet for cocktails at 6:30 p. m. and dinner at 8 p. m. at the Fairmont Hotel, Garden Room, San Francisco, June 28. Tickets, $7.50 per plate, are available at the Medical Alumni Office, 303 East Chicago Avenue, Chicago, or may be secured in San Francisco in the General Registration area.

National Board Officers.—The National Board of Medical Examiners held its annual meeting on May 3 in Philadelphia. The following new members were elected for a term of six years: Chandler McC. Brooks, Ph.D., professor of physiology, State University Medical Center at New York (Long Island College of Medicine), and Dr. Julian F. DuBois, St. Paul, secretary-treasurer of the Minnesota State Board of Medical Examiners. Dr. Howard T. Karsner, Washington, D. C., consultant to the Office of Scientific Research and Development, was elected president of the board for three years. Other officers elected were Everett S. Elwood, Philadelphia, executive secretary and treasurer, Dr. John S. Rodman, Philadelphia, medical secretary, and Dr. John P. Hubbard, Philadelphia, associate secretary.

Communicable Disease Report.—The total number of acute poliomyelitis cases reported for the week ending June 3 was 132, as compared with 103 the previous week. The corresponding figure last year was 156 and the five year (1945-1949) median was 144. Included in the total of 132 cases were 55 from Texas, 18 from California and 12 from Oklahoma. Reported cases of meningococcic meningitis numbered 72, as compared with 62 cases the preceding week and a five year median of 58. For the week ending June 3, 9 cases in Pennsylvania, 6 in Michigan, 6 in Tennessee and 7 in Texas were included. For the same week the following cases were reported: diphtheria 75, infectious encephalitis 9, measles 13,061, Rocky Mountain spotted fever 23, scarlet fever 1,015, smallpox 1, typhoid and paratyphoid 84 and tularemia 13.

F. B. I. Seeks Trace of Murderer.—The Federal Bureau of Investigation is seeking the whereabouts of Frederick J. Tenuto, who fled from Pennsylvania after conviction for murder. Medical records indicate that Tenuto has an allergic background. He has suffered from eczema, which may recur. At one time, during a recurrence, his eyes were swollen almost shut. Tenuto uses many aliases and is believed to be armed. He is 5 feet 5 inches, weighs 143 pounds, is stocky, has a dark complexion, black eyes, brown hair, a small brown mole on his right cheek and a 1½ inch scar over his right eye. On his left forearm is an imperfect tattoo, "S. J.," and on the right forearm an imperfect tattoo which may be "ANA," "ANNA" or "AMA." Any information relative to this man should be referred to the nearest office of the Federal Bureau of Investigation.

Research Careers in Heart Disease.—The American Heart Association is establishing career investigatorships as part of its research program. A career of investigation in the cardiovascular field, supported by the association, will be made available to "a select group of outstanding persons of unusual ability and originality," preferably in the 35 to 45 age group. They will have the opportunity of making research on cardiovascular problems their primary aim. The association will continue to award short term grants to individual investigators as well as to institutions for research projects. However, the major part of the association's research funds will be given to support persons who are interested in a research career. Nominations for career investigators may be made by members of the Scientific Council of the American Heart Association, deans of medical schools and heads of research units in the United States. Nominations should be sent to Dr. Charles A. R. Connor, the association's medical director, 1775 Broadway, New York 19. The career investigator may work in any institution in the United States which offers adequate facilities, and he will be free from additional administrative duties at that institution. Not more than 15 per cent of his time is to be spent in teaching. Certain career investigators may have access to patients, but any income thus created will be considered part of the stipend provided by the American Heart Association.

Certifying Board in Human Nutrition.—A certifying board to establish standards of qualification of persons as specialists in human nutrition has been established. The principal purpose of the board is to certify nonphysician specialists. It is not related to the various American medical specialty boards, the Advisory Board for Medical Specialties or the Council on Medical Education and Hospitals of the American Medical Association. However, physicians can be certified if they wish and are able to meet the requirements. Present members of the board are Otto A. Bessey, Ph.D., Chicago; Conrad A. Elvehjem, Ph.D., Madison, Wis.; Wendell H. Griffith, Ph.D., Galveston, Texas; Charles G. King, Ph.D., New York; Leonard A. Maynard, Ph.D., Ithaca, N. Y.; Dr. Frederick J. Stare, Boston, and Dr. John B. Youmans, Chicago. Requirements for admission to examination and certification are: (1) citizenship in the United States or Canada; (2) presentation of evidence of satisfactory moral and ethical standing; (3) Ph.D. in biologic science or M.D. degree from an approved school; (4) courses or training equivalent to a minimum of three semester hours in at least three of the following fields: food technology, microbiology of food, human physiology, large scale food preparation and hospital dietetics, and (5) three years' experience in the practical aspects of human nutrition. Qualified candidates will be considered for certification without examination until June 30, 1951. Further information may be obtained from the secretary-treasurer, Otto A. Bessey, University of Illinois College of Medicine, 1853 West Polk Street, Chicago 12.

Marriages

JOSEPH G. DOBOV, Central City, Pa., to Miss Margaret Elizabeth Spillman of Wilmington, N. C., April 28.

RAYMOND I. BAND, Washington, D. C., to DR. ALICE RUTH MESSINGER of Rochester, N. Y., April 30.

ELLSWORTH F. MALLOY, Fremont, Neb., to Miss Eileen M. McCarthy at Miami Beach, Fla., April 22.

ROGER PAUL BRASSARD, Laconia, N. H., to Miss Vivian Leonora Flanders of Grasmere, April 12.

CHARLES ARTHUR BERTRAND, New York, to Miss Mary Grace Lynch of Woodhaven, recently.

LEONARD J. FLOHR JR., Dallas, Texas, to Miss Emma Lou Holcomb of Tulsa, Okla., May 6.

THOMAS KAY CRAIGMILE, Oakville, Ind., to Miss Doris Anne Wolfe of Streator, Ill., April 19.

RANK O. DAWSON to Miss Annabelle Fisher, both of Charleston, W. Va., May 7.

DEATHS

Van Poole, Gideon McDonald ● Honolulu, Hawaii; born in Salisbury, N. C., Sept. 2, 1876; University of Maryland School of Medicine, Baltimore, 1899; entered the medical corps of the U. S. Army in 1900 and retired with rank of colonel in 1920 because of physical disability; member of the House of Delegates of the American Medical Association in 1933 and 1936; in 1925 president of the Honolulu County Medical Society and in 1934-1935 president of the Hawaii Territorial Medical Association; member of the American Academy of Ophthalmology and Otolaryngology, American Laryngological, Rhinological and Otological Society, American Bronchoscopic Society, American Ophthalmological Society, Association for Research in Ophthalmology, International College of Surgeons and the American Broncho-Esophagological Association; fellow of the American College of Surgeons; specialist certified by the American Board of Ophthalmology and the American Board of Otolaryngology; fellow of the American College of Surgeons; during World War I served in France and received a decoration from the French government; on the staffs of the Queen's, St. Francis, Kauikeolani Children's and Kuakini hospitals; died April 13, aged 73, of carcinoma of the prostate.

Thomas, Frank Howard, Jr. ● Passed Assistant Surgeon, Lieutenant, U. S. Navy, Cynwyd, Pa.; born at Bangor, Maine, Oct. 24, 1916; University of Pennsylvania School of Medicine, Philadelphia, 1942; entered the Naval Medical Corps on June 1, 1942 as a lieutenant (jg) and served his internship at the Naval Hospital, Philadelphia; during the remainder of World War II saw duty at the Naval Hospital, San Diego, the Terminal Island Receiving Station at San Pedro, the Naval Hospital, Long Beach, Calif., and on the *USS Pintney* (APH-2); later transferred to Naval Hospital, Annapolis, Md., and in 1948-1949 was under instruction in internal medicine at the University of Pennsylvania Graduate School of Medicine in Philadelphia; assigned to the Naval Administrative Command, Armed Forces Staff College, Norfolk, Va., when stricken by illness in November 1949; member of the American Psychiatric Association; died in Naval Hospital, Portsmouth, Va., May 15, aged 33, of poliomyelitis.

Patterson, Carl George, Seaside, Ore.; born in Danville, Ind., Nov. 22, 1877; Eclectic Medical Institute, Cincinnati, 1902; formerly practiced in Baker, Ore., during which time he was president of the Baker County Medical Society and the Baker County Health Association, city and county health officer and affiliated with St. Elizabeth's Hospital; for many years member of the board of medical examiners of the state of Oregon, of which he had been president; on the executive committee of the Federation of State Medical Boards of the United States in 1943-1944 and vice president in 1945-1946; during World War I member of the Baker County Draft Board and in 1940 appointed examining physician for the county selective service board; died May 1, aged 72, of heart disease.

Ziegler, Charles Edward ● Pittsburgh; born in Carlisle, Pa., March 23, 1871; University of Pennsylvania Department of Medicine, Philadelphia, 1900; professor emeritus of obstetrics at the University of Pittsburgh School of Medicine; an associate Fellow of the American Medical Association; member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons; fellow of the American College of Surgeons; for many years affiliated with the Elizabeth Steel Magee Hospital, of which he had been medical director; in 1938 received the degree of doctor of science from Dickinson College in Carlisle, Pa.; died in the Elizabeth Steel Magee Hospital April 26, aged 79.

Huether, Archibald Leslie ● Phoenix, Ariz.; born in Walkerton, Ont., Aug. 2, 1892; University of Toronto Faculty of Medicine, Toronto, 1920; director of the crippled children's division of the state welfare department; member of the American Academy of Orthopaedic Surgeons; specialist certified by the American Board of Orthopaedic Surgery; formerly associate clinical professor of surgery and chairman of the division of orthopedic surgery at the University of Utah School of Medicine in Salt Lake City, where he was affiliated with Shriners' Hospital for Crippled Children and St. Mark's Hospital; killed at Red Rock, Ariz., April 24, aged 57, in an automobile accident.

Hanson, William Thomas, Wakefield, Mass.; born in Calais, Maine, Jan. 12, 1880; Dartmouth Medical School, Hanover, N. H., 1904; member of the American Medical Association, the New England Society of Psychiatry and the American Psychiatric Association; past president of the Plymouth District Medical Society; retired member of the state department of mental health; served at the state hospitals in Taunton, Tewksbury and Bridgewater; for many years associated with the Veterans Administration in Boston; died in the New England Deaconess Hospital in Boston April 20, aged 70.

Adams, Lewis Nelson, Quinault, Wash.; Harvard Medical School, Boston, 1934; certified by the National Board of Medical Examiners; served during World War II; died April 24, aged 41, of heart disease.

Armsbury, Aaron Benjamin, Marine City, Mich.; Cleveland Medical College, Homeopathic, 1897; member of the American Medical Association; past president of St. Clair County Medical Society; president and for many years trustee of the board of education; for many years health officer; one of the founders of the Liberty National Bank, which he served as vice president and president; affiliated with the Port Huron (Mich.) General Hospital, where he died April 28, aged 79, of carcinoma.

Arnold, Clarence Robert, Colorado Springs, Colo.; Denver College of Medicine, 1895; affiliated with St. Francis and Memorial hospitals; died May 1, aged 80, of multiple sclerosis.

Auerbach, Johann Gottfried, New York; Friedrich-Wilhelms-Universität Medizinische Fakultät, Berlin, Germany, 1920; member of the American Medical Association; affiliated with the Flower and Fifth Avenue Hospitals; died recently, aged 56, of coronary thrombosis.

Bancroft, Edward Erastus ● Wellesley, Mass.; Harvard Medical School, Boston, 1886; an Associate Fellow of the American Medical Association; formerly consulting physician to Wellesley College; affiliated with Leonard Morse Hospital, Natick, and the Newton-Wellesley Hospital in Newton, where he died April 28, aged 91, of pulmonary embolus.

Bryson, Samuel Z., Washington, D. C.; University of Louisville (Ky.) Medical Department, 1888; died April 22, aged 88, of heart disease.

Busman, Herman, Holland, Mich.; Harvey Medical College, Chicago, 1903; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; formerly associated with the Federal Bureau of Animal Industry; died in Mease Hospital, Dunedin, Fla., April 29, aged 80, of cerebral hemorrhage.

Chapman, Willis Earle, Cheboygan, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1894; member of the American Medical Association; served during the Spanish-American War and World War I; formerly mayor of Cheboygan, city health officer and coroner; at one time acting assistant surgeon for the U. S. Public Health Service; for many years surgeon for the New York Central Railroad; member of the House of Delegates of the American Medical Association in 1927; died recently, aged 82.

Federn, Paul, New york; Medizinische Fakultät der Universität, Wien, Austria, 1895; member of the American Medical Association and the American Psychoanalytic Association; died May 4, aged 78.

Gervers, John Henry Richard, Bellaire, Mich.; Detroit College of Medicine, 1908; also a graduate in pharmacy; member of the American Medical Association; died April 16, aged 66, of arteriosclerotic heart disease.

Gore, Michael Alvord ● Granby, Colo.; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1918; member of the Connecticut State Medical Society and the New England Obstetrical and Gynecological Society; fellow of the American College of Surgeons; for many years practiced in Bristol, Conn., where he was affiliated with Bristol Hospital; died in Lutheran Sanatorium in Wheat Ridge, April 10, aged 56.

Goss, Charles, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1900; also a graduate in pharmacy; member of the American Medical Association; affiliated with Northeastern and Kensington hospitals; died May 6, aged 78, of coronary thrombosis.

Hanan, James Taylor ● Montclair, N. J.; Columbia University College of Physicians and Surgeons, New York, 1899; fellow of the American College of Surgeons; served during World War I; formerly member of the board of trustees of the public library and a member of the board of health; at one time commissioner of safety and public works; on the staff of Mountainside Hospital; consulting surgeon at Essex County Hospital for Contagious Diseases in Belleville; died April 24, aged 74.

● Indicates Fellow of the American Medical Association.

Hannum, Frank Walter ● Muskegon, Mich.; Rush Medical College, Chicago, 1914; affiliated with Mercy Hospital and Hackley Hospital, where he died April 19, aged 61, of duodenal ulcer with hemorrhage, hypertension and arteriosclerosis.

Harris, Roland Charles, Rochester, N. Y.; Syracuse University College of Medicine, 1905; member of the American Medical Association; for many years on the staff of Park Avenue Hospital; died April 14, aged 71, of bronchogenic carcinoma.

Hart, Henry D., Genesee, Pa.; Baltimore Medical College, 1893; member of the American Medical Association; served as president, secretary and treasurer of the board of education; died April 18, aged 89, of cerebral hemorrhage.

Heitmuller, George Henry, Washington, D. C.; University of Pennsylvania Department of Medicine, Philadelphia, 1894; died May 23, aged 80.

Hill, Earl Vernon, Chicago; Rush Medical College, Chicago, 1903; died in the Research and Educational Hospitals, University of Illinois, May 15, aged 72, of arteriosclerotic heart disease.

Hopper, Magnus Tate ● Brooklyn; New York Homeopathic Medical College and Hospital, New York, 1891; vice president and for many years director of the Carson C. Peck Memorial Hospital, where he died May 2, aged 83, of coronary occlusion.

Howard, John Rudolph, Pineville, Ky.; Lincoln Memorial University Medical Department, Knoxville, Tenn., 1915; died April 24, aged 60, of angina pectoris.

Hudston, Ranulph, Denver; University of Colorado School of Medicine, Denver, 1910; member of the American Medical Association; died recently, aged 66.

Koch, John A., Danville, Ill.; Columbian University Medical Department, Washington, D. C., 1897; also a graduate in pharmacy; member of the American Medical Association; fellow of the American College of Surgeons; served on the staff of Blessing Hospital in Quincy; died in the Veterans Administration Hospital April 20, aged 75, of cerebral hemorrhage and arteriosclerosis.

Langsdale, Guy H., ● Lexington, Ill.; Chicago College of Medicine and Surgery, 1911; served as a member of the library board and board of education; on the staff of Brokaw Hospital in Normal, where he died April 24, aged 67, of angina pectoris and cholecystitis.

Lavinder, Claude Hervey ● Medical Director, U. S. Public Health Service, retired, Monroe, Va.; University of Virginia Department of Medicine, Charlottesville, 1895; fellow of the American College of Surgeons; served during World War I; died in the U. S. Public Health Service Hospital in Lexington, April 22, aged 77, of arteriosclerosis with cerebral involvement.

Lemmer, George N., ● Madison, Wis.; Milwaukee Medical College, 1901; served during World War I; for many years health officer of Spooner; died in Wisconsin General Hospital, Madison, April 26, aged 77.

Lore, Harry Elmer, Cedarville, N. J.; Jefferson Medical College of Philadelphia, 1905; member of the American Medical Association; on the staff of the Bridgeton (N. J.) Hospital, where he died April 22, aged 69.

Lowenstein, Hans Jacob, Chestertown, N. Y.; Schlesische-Friedrich-Wilhelms-Universität Medizinische Fakultät, Breslau, Prussia, Germany, 1902; member of the American Medical Association; died February 13, aged 71, of hypernephroma with metastases.

McDaniel, Edward Bruce ● Portland, Ore.; Beaumont Hospital Medical College, St. Louis, 1892; Jefferson Medical College of Philadelphia, 1893; fellow of the American College of Surgeons; vice president of the American Medical Association 1924-1925; for many years president of the Oregon State Motor Association; formerly member of the state liquor control commission; died in St. Vincent's Hospital April 23, aged 76.

Maupin, Clinton Miller, Waurika, Okla.; Barnes Medical College, St. Louis, 1896 and 1897; died in Waurika Hospital March 31, aged 75, of cerebral hemorrhage.

Murphy, Amos M., Cape Girardeau, Mo.; St. Louis College of Physicians and Surgeons, 1904; member of the American Medical Association; died in Southeast Missouri Hospital April 3, aged 73, of heart disease.

Phipps, David Lincoln, Union City, Ind.; Kentucky School of Medicine, Louisville, 1892; member of the American Medical Association; formerly coroner of Johnson County; died April 11, aged 86, of coronary occlusion.

Pollock, John Roy ● Quincy, Ill.; Barnes Medical College, St. Louis, 1904; affiliated with St. Mary's and Blessing hospitals; died April 22, aged 70, of carcinoma of the esophagus.

Quinn, James McCaren, Burke, S. D.; University of Michigan Medical School, Ann Arbor, 1946; intern at Fairmont Hospital of Alameda County in San Leandro, Calif.; died April 3, aged 28.

Reid, Robert Francis, Troy, N. Y.; Albany Medical College, 1948; interned at the Waterbury (Conn.) Hospital; certified by the National Board of Medical Examiners; captain, Medical Corps, Army of the United States, attached to the Eighth Station Hospital in Kobe on the Island of Honshu, Japan, where he died April 22, aged 24, of burns suffered when fire wrecked an officers' billet.

Ringo, Robert Ellis, Tillamook, Ore.; Willamette University Medical Department, Salem, 1901; member of the American Medical Association; past president of the Oregon State Medical Society; died April 14, aged 77.

Robinson, John Steven, Clarkdale, Ariz.; Western Reserve University School of Medicine, Cleveland, 1942; member of the American Medical Association; served during World War II; died in Prescott May 5, aged 33, of subarachnoid hemorrhage and basal skull fracture received in an automobile accident.

Rosenberry, Edward Shimer, Stone Church, Pa.; Jefferson Medical College of Philadelphia, 1895; member of the American Medical Association; past president of the Northampton County Medical Society; for many years director and president of the Citizens Mutual Fire Insurance Company; affiliated with Easton (Pa.) Hospital; died in Palmerton (Pa.) Hospital April 29, aged 83, of cardiorenal disease.

Rule, Andrew Lafayette, Knoxville, Tenn.; Tennessee Medical College, Knoxville, 1902; member of the American Medical Association; died May 13, aged 73, of coronary occlusion.

Russell, S. Frank, Macomb, Ill.; Rush Medical College, Chicago, 1901; member of the American Medical Association; died May 9, aged 72, of chronic myocarditis.

Sandor, Ladislaus John, Bridgeport, Conn.; Magyar Királyi Erzsébet Tudományegyetem Orvostudomanyi, Pecs, Hungary, 1944; died recently, aged 29.

Sangree, Chalmers, New York; Medico-Chirurgical College of Philadelphia, 1891; member of the American Medical Association; died in Amityville February 1, aged 83, of arteriosclerotic heart disease and chronic glomerular nephritis.

Sevcik, John Louis, Chicago; Jenner Medical College, Chicago, 1914; affiliated with St. Anthony de Padua Hospital; died May 14, aged 66, of coronary occlusion.

Shafer, Frederick William ● Camden, N. J.; Jefferson Medical College of Philadelphia, 1908; also a graduate in pharmacy; fellow of the American College of Surgeons; for many years affiliated with Cooper Hospital; director of the Camden County Historical Society; died April 12, aged 67, of cerebral thrombosis.

Smith, Thomas Harley ● Bennettsville, S. C.; Jefferson Medical College of Philadelphia, 1908; affiliated with the Marlboro County General Hospital; died in Cherry Grove Beach April 20, aged 69, of acute coronary occlusion.

Spoor, John Sellers, Fort Lauderdale, Fla.; Medical College of Indiana, Indianapolis, 1901; died April 29, aged 83, of cardiovascular disease.

Trenckmann, Otto A., Bellville, Texas; University of Louisville (Ky.) Medical Department, 1893; died in a local hospital February 8, aged 79, of virus pneumonia and arteriosclerosis.

Truett, Charles Badgett ● Denison, Texas; Baylor University College of Medicine, Dallas, 1940; served during World War II; died March 26, aged 33, of coronary thrombosis.

Welland, Herman, Rockbridge Baths, Va.; College of Physicians and Surgeons, Baltimore, 1899; formerly practiced in Canton, Ohio, where he was past president of the Canton Academy of Medicine and the Stark County Medical Society; died February 28, aged 78.

Wells, Gould Terrance, Lawton, Okla.; University of Arkansas School of Medicine, Little Rock, 1927; served during World War II; died in Dallas, Texas, April 18, aged 51.

Wren, Charles Wadison, Chicago; Meharry Medical College, Nashville, Tenn., 1915; died in Provident Hospital May 19, aged 60, of cerebral hemorrhage and essential hypertension.

Young, Charles Oscar, Los Angeles; Harvard Medical School, Boston, 1893; died April 12, aged 84.

FOREIGN LETTERS

NORWAY

(From a Regular Correspondent)

OSLO, May 7, 1950.

The Norwegian Radium Hospital

The latest annual report of the Norwegian Radium Hospital, issued as a supplement to the organ of the Norwegian Medical Association, *Tidsskrift for Den Norske Laegeforening*, covers the year 1948 and gives a good bird's eye view of present treatment of cancer in Norway. New growths are commonly associated with old age, but among the patients admitted to this hospital in 1948 there were as many as 450 under the age of 5 years. There were only 34 patients between the ages of 5 and 10 years. There were 549 patients over the age of 70, only 99 more than patients under 5. An index of sickness insurance in Norway is to be found in the fact that among the 3,518 patients treated in 1948 there were as many as 2,517 whose hospital expenses were wholly or partially defrayed by sickness insurance. A classification of the cases based on the location of the disease shows how enormously important this factor is to the prognosis. Thus among the 29 patients with carcinoma of the esophagus there were only 7 about whom it could be claimed that they had been discharged symptom free or better. Among the 578 patients with carcinoma of the skin there were as many as 547 for whom this claim could be made. The outcome of treatment for carcinoma of the lips was also good, with 109 out of 125 patients discharged as symptom free or better. The corresponding figures for hemangioma were 453 out of 474 and for nevus pigmentosus, 26 out of 29. The treatment of Dupuytren's contracture was also usually successful, with 36 out of a total of 43 patients discharged as symptom free or better.

Causes of Blindness

A survey of causes of blindness in Norway, based on information concerning persons who were blind in 1948, has enabled Dr. J. C. Holst of Oslo to publish an important monograph on the subject. His card index shows that at this date there were 3,181 persons who were blind according to the definition in the Norwegian law of July 16, 1936. One of the most striking findings of this survey is that almost half the cases of blindness had hereditary causes (1,585, or 49.8 per cent). As Dr. Holst points out, earlier surveys elsewhere have shown hereditary diseases to be responsible for blindness in only one third of the total or less. The high hereditary rate in Norway probably reflects the thoroughness with which individual cases of blindness have been studied, several of the blind having been under close and prolonged medical observation. In the list of cases of blindness due to hereditary disease, congenital atrophy of the optic nerve was causative in 102, retinitis pigmentosa in 263, congenital cataract in 304, excessive myopia in 94 and glaucoma simplex in 145 cases. Dr. Holst notes that his inclusion of glaucoma simplex among the hereditary diseases may be challenged, but he feels sure of his ground on this score. He is diffident about his inclusion of 33 cases of senile cataract.

Dr. Holst discusses the possibilities of sterilization to prevent blindness due to hereditary disease and a ban on the marriage of persons with hereditary blindness as a dominant characteristic. Between 1945 and the end of 1949, 5 prospective parents (4 women and 1 man) submitted voluntarily to sterilization to avoid begetting blind offspring.

Turning to blindness not due to hereditary disease, Holst notes that among the 1,596 blind persons in this category 945 were male and only 651 female—a sex disparity which reflected to some extent the comparatively great liability of the male to become blind from trauma (among the 406 traumatic cases of blindness there were 340 males and only 66 females). All the 50 cases of blindness due to intoxications concerned males (as many as 42 of these 50 cases were due to methyl alcohol poisoning). The rarity of blennorrhea neonatorum as a cause of blindness (only 60 cases) is indicative of the comparative effectiveness of the campaign in Norway against this disease.

Influence of Diet on Diseases of the Circulatory System

Was the comparative immunity to heart disease enjoyed by Norwegians during the occupation of Norway by the Germans a by-product of the rationing and other dietary restrictions they imposed on their victims? At a recent meeting of the Norsk Hygienisk Forening (Norwegian Public Health Association) Prof. Axel Ström presented many arguments in favor of this view, which he substantiated by various statistics. He pointed out that in the period 1927-1940, the mortality from diseases of the circulatory system rose steadily in Norway. Though some of this rise reflected changes in the age composition of the population, a correction of this source of error failed to eliminate this rise altogether. From 1941 onward there was a fall in the mortality from this group of diseases, which reached its lowest point in 1943-1944. After the war the mortality from this source mounted. The fall during the war and the rise after it concerned both sexes and every age.

Professor Ström correlated the mortality curves with the rise, fall and rise again of the consumption of articles of food rich in fats and cholesterol in the prewar, wartime and postwar periods, respectively. The mortality from arteriosclerosis plus chronic myocarditis fell much more in the strictly rationed towns than in the country areas, in which food restrictions could not so easily be enforced as in the towns. Professor Ström and his assistants have also investigated the frequency of postoperative thrombosis and embolism in a large hospital in Oslo and have found a decline in the frequency of these complications during the war followed by a pronounced rise after it. They do not claim to have proved their case and are not prepared to advocate an immediate and radical change with regard to the nation's dietary, but they hope that the evidence they have marshalled so carefully will serve as ammunition for the campaign against overweight and against meals with an abundance of fats.

Hospital Report on Surgical Treatment of Tuberculosis

The editors of annual reports of hospitals may present a mere skeleton composed of figures and statistics, or they may surround their figures with running comments to introduce the reader to many interesting problems. The latter course has been chosen by the editors of the last annual report (for 1948) on the activities of the Coast Hospital at Stavern—the most important institution of its kind in Norway. A generation or two ago, tuberculosis requiring surgical treatment was regarded as a disease mainly of childhood and adolescence. Now, with an upward shift of the age at which infection with tuberculosis first occurs, adults outnumber children in hospitals for surgical treatment of tuberculosis. In the present instance there were only 44 patients under the age of 14 admitted to the hospital in the year in question, as compared with 147 aged 15 and up. Among the 180 patients discharged from the hospital in this year, there were as many as 91 who could be considered as cured and 72 who were considerably improved. Yet many of these cases were complicated by tuberculosis of the lungs and pleurae. This report includes an informative essay on fashions in the treatment of tuberculosis and on the swing of the pendulum as climate, high altitude heliotherapy and operative treatment enjoy vogues of variable duration.

SPAIN

(From a Regular Correspondent)

MADRID, March 18, 1950.

Syndrome of Adiposity, Exophthalmic Goiter and Fever

Dr. Marañon, professor of endocrinology at the University of Madrid, recently published an article in *Boletín del Instituto de Patología Médica* (5:47 [March] 1950) in which he described a syndrome caused by hyperthyroidism. Hyperthyroid diseases are diseases of the nervous system. Charcot regarded them as sympathetic neuroses, whereas Trosseau regarded them as neuroses of a hysterical type. It is difficult to find the exact limits of hyperthyroid syndromes within the general field of thyrotoxicoses. There are two different groups of thyrotoxicoses, namely, those of primary thyroid origin and those which are secondary to a disturbance of the hypothalamus and the hypophysis. The classic syndrome of exophthalmic goiter and that of hyperthyroidism without goiter, or neurologic goiter, correspond to the secondary group. They constitute the majority of hyperthyroid syndromes and should be included in Charcot's and Trosseau's classic neurogenic conception. The speaker discussed the hyperthyroid syndrome of hypothalamic origin, consisting of fever, vitiligo and emotional hypersensitivity (the so-called affective clonus). The hyperthyroid symptoms are few, whereas clinical nervous symptoms are predominant. There are insomnia, nervousness, tachycardia and disorders of digestion. The clinical symptoms of various forms of hyperthyroidism of hypothalamic origin are different than those regarded as classic symptoms of exophthalmic goiter. The thyroid symptoms, although moderate, are sufficient to permit diagnosis. They consist of mild exophthalmus, small thyroid adenoma, either diffuse or nodular, sensations of accelerated vitality and, frequently but not always, moderate increase of the basal metabolic rate, the lack of which increase does not conflict with the diagnosis. The author describes a new atypical neurogenic hyperthyroid syndrome, consisting of adiposity, exophthalmic goiter and fever. Obesity, as a constant accompaniment of hyperthyroidism, was described long ago by West, Mackenzie and Kocher as "plum-thyrotoxicosis" in exophthalmic goiter. The adiposity predominates about the waist line and down to the legs, in a form similar to that of the adiposogenital syndrome. Sometimes it is sufficiently pronounced to be comparable with Barraquer-Simmonds' cephalothoracic lipodystrophy. Basedow in 1840 and Marañon and Blanco Soler in 1926 pointed out that there is a causal relation between hyperthyroidism and obesity from the waist line to the legs. Fever is always present. Frequently it is higher than that of common noninfectious diseases. It lasts for an indefinite period, diminishes or disappears during rest at night and increases after either physical effort or emotion and also during the premenstrual period. In this syndrome most of the symptoms of hyperthyroidism are of the nervous type, including tremor, tachycardia, nervousness and anxiety. The symptoms indicate nervous disorders rather than hyperthyroidism. The presence of a moderate exophthalmus, a mild retraction of the upper eyelid or a moderately enlarged thyroid may point to the causative thyroid disorder. The basal metabolic rate is increased to + 15 to + 25 per cent. An epinephrine injection in these cases raises the basal metabolic rate and causes a strong neurosympathetic and circulatory response, during which the syndrome of "emotion without emotion," which the author described several years ago, is produced.

The syndrome of Basedow type adiposity and fever develops almost exclusively in women between 35 and 50 years of age. At the beginning this syndrome is usually related to intense emotions, anxiety and preoccupation or emotions of a sexual type, including sexual crises of pregnancy, lactation and menopause. The diagnosis of this syndrome is difficult, because the patient rarely shows symptoms of hyperthyroidism. The patients as a rule consult the physician on account of adiposity, fever and nervousness. The author studied 27 clinical cases and concluded that the syndrome is of hypothalamic origin. A secondary group with a tendency toward increased basal metabolic rate, either actual or latent, or occasional slight increase in size of the thyroid and glycosuria, is of thyroid origin, although induced by the primary stimulation of the hypothalamus. Lipodystrophy from the waist line to the legs has also the characteristics of increase in weight of hypothalamus-hypophysial origin. The hypothalamic mechanism for the control of body temperature is now well understood.

The author treated hyperthyroidism with thiouracil derivatives, sedatives of the sympathetic nervous system, rest and psychotherapy, obtaining excellent results. In some obstinate cases radiotherapy of the hypophysial region and the thyroid region was successful. Thyroidectomy is indicated only in rare cases.

Society of Pathology of Digestion and Nutrition

This society held its third annual meeting Dec. 16-17, 1949, at the assembly hall of the Colegio Oficial de Médicos, Madrid. The official topic was cirrhosis of the liver. The inaugural session was presided over by Dr. Heliodoro G. Mogena of Madrid, president of the society. Official speakers in the morning sessions were Drs. Castro Mendoza, Morales Pleguezuelo and Arias Vallejo, who spoke on experimental cirrhosis of the liver. Drs. Galán and Andoiz collaborated with Dr. Arias Vallejo. Official speakers in the afternoon were Drs. Pons, Suárez and Díaz Rubio, who spoke on splenomegalic cirrhosis, cirrhosis in children and pathogenesis and treatment of cirrhosis, respectively. The paper dealing with early diagnosis of cirrhosis of the liver contained an evaluation of the different tests of function of the liver in comparison with the histologic changes shown by biopsy of the liver during laparotomy. A general discussion of the articles on the official topic was held December 17. Drs. Ortiz de Landazuri, Morana, Jiménez, Vilaclara, Calvo, Morales Pleguezuelo, Vivanco, Ortega, Roda, La Figuera, Rocha, Andreu Urra, Pinos, Mogena, Torres, Hernando, Oliver and Larru discussed the paper. In the afternoon Drs. Farreras Valenti, Magriña, Llebaria, Bacardi, Ciscar Rius, Pinos, Villaclara, Vidal Ribas, Díaz Rubio, Muñoz and Romero Calatayud read papers on cirrhosis of the liver.

SWEDEN

(From a Regular Correspondent)

STOCKHOLM, May 14, 1950.

Alternating Plethora and Scarcity of Doctors

Within a period of three decades Sweden has witnessed a plethora of doctors and, at the present time, a scarcity of them. As Dr. Gustaf Myhrman recently pointed out, during the first of these three decades medical students jostled one another and had to wait for one another because of restricted accommodation in laboratories and hospitals. A curriculum supposed to last eight years ran into nine years while the students queued up for vacancies. The situation was unfortunate, also, for the student who had struggled through this bottleneck and had passed his final examinations, as internships and other opportunities for postgraduate training were sadly inadequate. For want of something better he accepted medical work without pay or for a pittance, and when his seniority was such that he could apply for the appointment of a local medical officer of health his competitors were still numerous. The average age of the 28 doctors applying for such a post in 1936 was 37.5 years. Doctors investigating the possibilities of emigration to other lands were warned that a Swedish medical diploma was worth little elsewhere. Furthermore, how was the Swedish-

speaking doctor to gain the confidence of patients who spoke another language?

Dr. Myhrman quotes the following figures to show how the number of doctors in Sweden has increased since 1919, when there were only 1,706. In 1929 there were 2,493, in 1939 there were 3,370 and in 1947 there were as many as 4,234. Yet there is a shortage of doctors now. The situation is, however, not so paradoxic as it may seem at first sight, for in 1920 there were only 308 hospital appointments in all the general hospitals in Sweden. By 1930 this figure had risen to 632. In 1940 it was up to 1,130, in 1944 it was 1,327 and in 1950 it is about 1,600. At the same time there has been an appreciable rise in the number of appointments of local medical officers of health and the like.

During 1949, 177 students qualified as doctors and 59 doctors died. This gives a surplus of 118. But during the same year, 104 new hospital appointments were created and 15 new openings for medical officers of health were provided. Dr. Myhrman wonders whether the nation can afford all the new, more or less official openings recently created for the medical profession. Within a few years the new medical high school in Gothenburg will be adding to the annual output of new doctors.

Pituitary Gland Implantation for Chronic Arthritis

As far back as 1942, Gunnar Edström published in conjunction with his colleague Axel Westman a report of a case of chronic arthritis in which pituitary gland implantation gave promising results. In 1949, encouraged by a recent visit to the United States, Edström undertook several pituitary gland implantations at a rheumatism hospital in Lund. These operations, reported on in a recent number of *Nordisk medicin*, were carried out in September and October 1949, under local anesthesia. All 10 patients operated on suffered from chronic polyarthritis, which had lasted four months to four years. The pituitary gland was taken from a 7 month human fetus in one case; in the other cases the pituitary glands of recently killed calves were employed and were implanted in the deep subcutaneous tissues of the gluteal region. The operation was complicated in 2 cases by transitory suppuration; in the other cases the operation wound healed by first intention.

Edström is careful not to make extravagant claims with regard to lasting effects, but among the first 9 patients there were 6 who were discharged from the hospital objectively and subjectively symptom free and with a relatively normal sedimentation rate. During their stay in the hospital there was a rapid diminution of stiffness of and effusion into the affected joints. Tenderness on pressure diminished, and appetite improved with a gain of weight. The slight euphoria was reminiscent of results in treatment with pituitary adrenocorticotropic hormone (ACTH). Among the remaining 3 cases there were 2 in which some improvement could be claimed. Thus there was only 1 case in which the reaction to this treatment was disappointing. At this time the observation period for the first 9 cases was only two to three months. It seemed that the response to treatment was most satisfactory among the younger patients; all who were under the age of 40 responded relatively well to this treatment.

In Stockholm also pituitary gland implantation has recently been undertaken in several cases, and Axel Westman of the gynecologic Karolinska Hospital reported last year on his observations in cases of ovarian disorders with signs of endocrine disturbances. He prefers the term "implantation" to "transplantation," as he does not believe that the implanted pituitary gland cells persist as such when introduced into the body. He suggests that implantation sometimes produces a better effect than current hormone therapy because the former provides the body with a number of pituitary gland hormones. Like Edström, Westman obtains his pituitary glands from newly slaughtered calves.

Psychologic Causes of Gastric Ulcer

At St. Erik's Hospital a team of doctors headed by F. Bárány has undertaken systematic investigations of the psychologic factors likely to play a part in provoking gastric ulcer. In a series of 108 cases of gastric and duodenal ulcer they found some acute mental conflict in 54 cases and a chronic mental conflict in 29 cases. In 22 cases psychopathologic symptoms without mental conflict were observed. Thus there were only 3 cases in which no psychologic factors could be found in connection with the ulcers. One of the most dramatic cases observed was that of a policeman, aged 40, given the task of searching a villa whose owner was suspected of having arms and petrol illegally. The owner was not at home when the policeman called, and the owner's wife, who suffered from heart disease, was so disturbed by the policeman's visit that she took to her bed. The policeman found his task so distasteful that he finished it quickly. Next morning the owner of the villa telephoned: "You have murdered my wife, who died directly after you left the villa." The newspapers made much of the incident, which affected the policeman profoundly and is said to be the precursor of a gastric ulcer. As Malmros and Hiertonn have lately pointed out, the ultimate prognosis for gastric and duodenal ulcer treated somatically only is most unsatisfactory, and it is not likely to improve as long as the investigator is mainly concerned with the presence or absence of a radiologically demonstrable lesion.

BELGIUM

(From a Regular Correspondent)

LIÈGE, May 20, 1950.

Tularemia in Belgium

The laboratories discovered an epidemic of tularemia among leporidae and certain rodents in southeast Namur during December 1949. This epidemic produced infections in human beings, which were confirmed by serologic tests. Observations to date indicate that the handling of hares and, more rarely, of infected wild rabbits has been the source of contamination. An extension of the disease does not seem likely, at least during the next months.

The bacillus of tularemia is sensitive to chloramphenicol and aureomycin; streptomycin, although less active, may nevertheless produce good results. The Central Hygiene Laboratory at Brussels has put itself at the disposal of the medical corps for serologic tests in the diagnosis of the infection.

Course in Orthopedic Surgery

The Belgian Society of Orthopedic Surgery passed the following resolutions: Considering the growing importance of orthopedics and surgery, the social repercussions of the care given to those injured in accidents and to the disabled, the backward state of Belgium in this respect in comparison with other countries, particularly Great Britain, France, Holland and the United States, and the necessity for remedying the present educational situation, the Society expresses the unanimous intention of creating a chair of orthopedic surgery at every Belgian university, with obligatory attendance of courses.

First International Congress of Gerontology

This congress, which will be held at Liège July 9-12, 1950, will deal with cardiovascular diseases and senescence and with nutrition, endocrinology and senescence. The creation of an international association of gerontology will be discussed during the congress. Prof. L. Brull is the president of the organizing committee and Dr. A. Divry is secretary. All correspondence regarding attendance, the program or the organization of the conference should be addressed to Prof. F. Brull at Clinique médicale, Hôpital de Bavière, Liège, Belgique.

BRAZIL

(From a Regular Correspondent)

Rio de Janeiro, May 20, 1950.

A New Phenomenon of Immunity

Dr. Julio Muniz, of the Rio de Janeiro Oswaldo Cruz Institute, described a new phenomenon associated with immunity reactions, which he called "conditioned hemolysis." During experimental work conducted to simplify the technic of hemagglutination tests for the diagnosis in chronic cases of American trypanosomiasis (Chagas's disease), the author found that in such cases the red blood cells, when in contact with the serum of the same patient, were hemolyzed if they had previously been adsorbed with the polysaccharid fraction of Schizotrypanum cruzi. The same phenomenon was observed in rabbits immunized with the culture forms of the parasite.

It is a common practice in the technic of hemagglutination to use sheep's blood cells as the element to be sensitized with the fraction under study. But, since the antigenic structure of the blood cells has heterogenic components which are able to react with heterophilic antibodies existing in many human serums, and these antibodies may cause agglutination as well as hemolysis, it is necessary to have a previous adsorption of the serums with these blood cells, to retain the nonspecific antibodies for the fraction under investigation. In American trypanosomiasis, which is now being studied by Dr. Muniz, this step of the technic is important, since there are heterogenetic components in the antigenic structure of the trypanosoma, as the same author reported in 1944. Later and still unpublished studies with the collaboration of M. Carneiro Felippe demonstrated the existence, sometimes in high titers, of heterophilic antibodies in the serum of patients with trypanosomiasis. To avoid the previous adsorption with normal sheep's blood cells, the author used red cells of the patient or of any human donor of the O group, which possess no agglutinogen for the isoagglutinins of man. It was during the performance of this technic that the author noted the occurrence of hemolysis, the intensity of which varied with the serum concentration, thus preventing the observation of the agglutination.

In contrast with what is observed in specific hemolysis due to the direct action of a hemolytic sensitizer on the constituents of the red cell itself, in the aforementioned case the hemolysis results from the action of a specific sensitizer for the adsorbed fraction. The author calls this phenomenon, which constitutes a particular immunity reaction, "conditioned hemolysis." The possibility of this phenomenon's being a peculiar characteristic of the aforementioned fraction of the Schistosoma cruzi is now being investigated.

Mitsuda's Reaction in Leprosy

Dr. J. Lopes de Faria, of the department of pathology, University of São Paulo, published a report summarizing the results of his experimental studies on Mitsuda's reaction in leprosy. The nature of this reaction is not yet established. In the opinion of some authors it is nonspecific, independent of the antigen-antibody mechanism and due to the natural resistance of the tissues, but most of the investigators admit that the reaction is an allergic phenomenon, in spite of its positivity in normal persons and its long incubation of three and four weeks in contradistinction to the early results of the hypersensitive reaction. Recent experimentation by Dr. de Faria with adult dogs from nonleprous communities confirmed that animals not previously inoculated with Mitsuda's antigen presented a nodular reaction, of tubercular structure, to the lipid fraction of the antigen. In contrast with the reaction to the whole antigen, the reaction to the lipid fraction appears early, is smaller in area and has a quicker evolution. Histologically, the granulomatous reaction to the lipid fraction was also earlier, because the lipids were free, the epithelioid cells making their appearance about the fourth day after the injection. The later appearance of the reaction to the whole antigen, its longer evolution and its greater intensity are due to the lipids being not free but bound to the bacilli, the liberation of the lipids being delayed as the disintegration of the bacilli takes place slowly. Important also was the comparison of the macroscopic and microscopic features of the reaction to Mitsuda's antigen in the dog and in the tuberculoid leprous patient. Macroscopically the dog did not present the early reaction; the nodular late reaction appeared earlier in the leprous patient than in the dog, without any latent period; in the dog the ulceration of the nodule was constant, but it was rare in the leprous patient. Microscopically the initial inflammatory reaction of the leprous was partially hyperergic in nature, characterized by its greater intensity, higher number of eosinophilic leukocytes in the exudate and early macrophagic mobilization; the earlier appearance of granulomas in the leprous patient (48 hours) than in the dog (fourth day) and its longer duration (90 days); the bacillary phagocytosis was less intense between one and 48 hours, and the bacilli remained for a longer time in the reaction of the leprous patient (88 days) than in the dog (35 days).

The author believes that in the leprous patient only the early reaction is allergic in nature, the late reaction being due to the natural resistance of the organism, which is responsible for the breaking down of the majority of Hansen's bacilli and the liberation of the lipids that elicit the nodular granulomatous reaction. The presence of such a natural resistance explains the Mitsuda phenomenon in the dog and in the normal person with a negative tuberculin reaction. The absence of natural resistance explains the negative Mitsuda reaction, as for instance in children and in lepromatous persons. Supporting the view that the Mitsuda reaction is nonspecific in nature, independent of antigen-antibody mechanism, is its positivity with several acid-fast bacilli and with a normal skin extract. Dr. de Faria points out that the milder degree and the quicker evolution of the reaction to the lipids when compared with the response to the whole antigen might even be wrongly regarded as negative. Therefore, the histologic examination is useful, showing the granulomatous structure of the reaction. The rare discordance between the early and the late reactions, i. e., one negative and the other positive, or vice versa, is explained through the presence of natural resistance (positive late reaction) without allergic hypersensitiveness (negative early reaction), or vice versa. This would explain the relation between the early and the late reactions, the first indicating the presence of allergic hypersensitiveness and the second indicating the presence of natural or acquired resistance.

The author also calls attention to the criterion for the reading of the Mitsuda reaction. In doubtful and in anomalous cases, with positive reactions in lepromatous patients and negative reactions in tuberculoid patients the histologic examination of the reaction is indispensable in order that one may determine its positivity (tuberculoid structure) or negativity (lepromatous structure). This examination affords the only reliable way of reading the reaction, as according to the author's observations there are reactions in lepromatous patients which would be considered positive and in reality are negative, because they present the lepromatous structure. Dr. de Faria thinks, therefore, that in his previous reports as well as in those of other authors there was only pseudopositivity. It is important to ascertain this pseudopositivity in several instances. It may occur in lepromatous patients when one uses an antigen prepared from acid-fast bacilli other than Hansen's. In improved or healed lepromatous patients, a tuberculoid reaction means that immunity or acquired resistance to leprosy developed, thus providing verification of the presence of acquired resistance in lepromatous leprosy. The histologic examination would also be important in children whose reactions to the lepromin test became positive through BCG injection and in the lepromatous with reactions made positive because of repetition of Mitsuda's reaction or treatment with lepromin.

CORRESPONDENCE

POSTOPERATIVE TETANUS AND IMMUNITY

To the Editor.—In the otherwise excellent clinical note on "Postoperative Tetanus" by Henry J. Van Duine in THE JOURNAL (**143**: 175 [May 13] 1950) there apparently is an error in the last paragraph, page 176, in the sentence reading "A year later immunity can be boosted by either toxoid or toxin." Tetanus toxin is not used in clinical medicine for the reason that the administration of a dose of toxin sufficiently large to produce an adequate response would be extremely hazardous.

I suspect the author may have intended to use the word "antitoxin" instead of "toxin." For those who have had basic immunity to tetanus established, toxoid is much to be preferred to antitoxin in subsequent immunization. The immune response from a booster dose of toxoid is higher and more lasting, and serum reactions are avoided. Toxoid was used exclusively for increase of immunity on exposure in the armed forces during World War II, and the results were excellent as the author points out.

W. G. WORKMAN, M.D.,
National Institutes of Health,
Bethesda, Md.

To the Editor:—In the article entitled "Postoperative Tetanus" by Henry J. van Duine in THE JOURNAL May 13, 1950, the following statement appears in the conclusion: "A year later the immunity can be boosted by either toxoid or toxin." I feel that this statement should have been challenged by the Editor before appearing in print. It is perhaps technically possible to utilize toxin as a booster dose, e. g., a Schick test in the case of diphtheria. No person would, however, have the temerity to use toxin for the purpose implied. No preparation of either tetanus or diphtheria toxin for this purpose is licensed by any department of government as far as I am aware.

DONALD T. FRASER, M.B., Professor of Hygiene
and Preventive Medicine, University of Toronto.

UNDECYLENIC ACID AND PSORIASIS

To the Editor:—Since publication of the article by Perlman (J. A. M. A. **139**: 444 [Feb. 12] 1949) in which he reported favorably on the use of undecylenic acid in the treatment of psoriasis, varying degrees of success have been recorded by different authors. Drug salesmen have, in many instances, been enthusiastic. At a staff conference comprising some 30 dermatologists from the Department of Dermatology, University of Pittsburgh, over 200 cases of psoriasis treated by the method outlined by Perlman were reviewed. Undecylenic acid was administered for three to six months. The universal conclusion was that in not a single case did any improvement occur that could not be accounted for by the vagaries of the disease.

WILLIAM B. GUY, Department of Dermatology
and Syphilology, University of Pittsburgh.

POSTCHOLECYSTECTOMY SYNDROMES

To the Editor:—In his article on Postcholecystectomy Syndromes in THE JOURNAL (**142**: 1262 [April 22] 1950) Dr. Pribram states (page 1263) that morphine injections cause contractions of the sphincter of Oddi followed by an increase in intraductal pressure and that antispasmotics, like atropine, cause the pressure to drop or at least prevent a rise in pressure after simultaneous administration of morphine. In discussing the medical treatment of this syndrome (page 1267) the author states that morphine should never be given without an adequate dose of atropine sulfate.

Morphine (and other phenanthrene derivatives) cause contraction of smooth muscle by direct action on the muscle itself, whereas atropine relaxes smooth muscle by preventing acetylcholine from entering the muscle cells—the atropine does not act on the smooth muscle itself. Therefore atropine will not relax the morphine-induced spasm of the sphincter of Oddi. Inhalation of amyl nitrite will relax this type of spasm. Nitroglycerine administered sublingually also decreases the spasm, the effect being less pronounced but more prolonged than that produced by amyl nitrite.

RICHARD D. AMELAR,
Senior Medical Student,
New York University College of Medicine.

SKIN DISINFECTION WITH ETHYL ALCOHOL

To the Editor:—In a recent editorial in THE JOURNAL, "Ethyl Alcohol for Skin Disinfection" (**142**: 1079 [April 8] 1950), the use of alcohol was stated to be "deficient in its inability to kill spores and tubercle bacilli, deficiencies which are shared by all commonly used skin disinfectants."

I believe that this should be modified, or even reversed. Dr. C. R. Smith reported, more than two years ago (*Pub. Health Rep.* **62**: 1285 [Sept. 3] 1947) that alcohol is a very good antiseptic for use against the tubercle bacilli. It is active at 50 to 70 per cent strengths, and isopropyl is as good or better than ethyl, as well as cheaper. It acts rapidly and can be used on the hands, small surfaces and on many small articles.

A quotation of this information appeared in THE JOURNAL Aug. 7, 1948, page 1352, in a note to the editor, and has appeared since then in several hospital journals. The cresols and the less odorous phenyl-phenols have again been proved to be effective; they can be used in the same situations which have been mentioned for alcohol usage, and also for cleaning of floors and other surfaces. They are apparently efficient in dilutions of 1:100 and 1:200. I mention these points only because aseptic technic and care of tuberculous patients is of increasing importance and because the best methods have not been certainly and generally known.

WILLIAM H. OATWAY Jr., M. D.,
La Viña, Calif.

DERMATITIS FROM IODOACETIC ACID

To the Editor:—I should like to confirm the evidence given by your contributors (Marcus and Frerichs, J.A.M.A. **142**: 805 [March 18] 1950) of the somewhat acute dermatitis produced by contact of the skin with iodoacetic acid. Some twenty years ago I had occasion to make some of this compound, and the symptoms produced by contact with my hands were identical with those described in case 2. I had the impression that larger crystals of iodoacetic acid destroy the skin, and the resulting sores proved difficult to heal. I found that the use of gloves and manipulation of the compound behind the glass screen of a fume chamber solved the difficulty.

It is worth noting that chloracetic acid, a much commoner chemical, produces a similar if less severe dermatitis, particularly on repeated exposure, and it is stated in textbooks that bromacetic acid behaves similarly.

J. A. MARRIOTT, M.Sc., Ph.D., Leicestershire, England.

Medical Motion Pictures

Feeling All Right. 16 mm., black and white, sound, showing time 30 minutes. Produced in 1948 by the Southern Educational Film Production Service, Inc., University of Georgia for the Mississippi State Board of Health. Procurable on rental or purchase from the Communication Materials Center of Columbia University Press, New York 27.

This is a dramatic presentation directed toward early diagnosis and early adequate treatment of syphilis. It carries the experience of several persons with syphilis to logical conclusions. It shows one couple depending on nostrums for treatment with an unfortunate outcome and another couple approaching their problem through normal treatment and diagnostic channels to a successful outcome. It points out that diagnosis and treatment of syphilis can be obtained from either the family doctor or the public health clinics.

Since this film consists of a Negro cast with the exception of Health Department personnel, it is obviously intended for the Negro population. It is designed to encourage voluntary blood tests. The story runs smoothly, and the sequences follow in logical order. It is entertaining and instructive. Epidemiologic follow-up of known contacts could have been more strongly emphasized.

The film should be suitable for showing to public health personnel, nurses and lay groups and would be particularly useful for rural areas with a concentrated Negro population. Photography, narration and direction are excellent.

The Thinnest Slice. 16 mm., black and white, sound, showing time 24 minutes. Produced in 1949 by the University of Southern California Department of Cinema in cooperation with the School of Medicine coordinated by the Department of Development. Procurable on loan (service charge) or purchase from the Audio Visual Service Department, University of Southern California, Los Angeles 7.

This is a report type motion picture depicting in detail the technic worked out by Drs. Richard F. Baker and Daniel C. Pease for thin sectioning and electron micrography of tissues. The authors claim to have succeeded, for the first time, in photographing chromosomes of the salivary gland of Drosophila.

The film shows the modification necessary to the standard microtome equipment and the sharpening of the blade with the Fanz automatic sharpener. The steps in the preparation of the specimen are presented in great detail. Much time is taken up by details of printing and developing a standard technic too familiar to require such treatment. This is remindful of a Hollywood production of a scientific subject; close-ups of the author's face and musical accompaniment are adaptations from other fields of motion picture production hardly needed in scientific films. The film gives a satisfactory picture of advances in electron microscopy. It is suitable for showing to physicians in general, medical students and laboratory technicians.

Life with Grandpa. 16 mm., black and white, sound, showing time 17 minutes. Produced in 1949 by The March of Time. For information with regard to the availability (rental or purchase) of this film, write The March of Time Forum Films, 369 Lexington Avenue, New York 17.

This motion picture depicts the problems of the aged resulting from increased life expectancy. Some of the reasons are given for increased expectancy and, therefore, the increase in older persons in the population. Possible means of solving the resulting problems are suggested, among them pensions, social security, continued employment and retirement on earlier earnings, but no solution is given to the major problems of inactivity and insecurity that characterize so many older persons.

This report type film presents the problem effectively and points to a few things accomplished today, but no effort is made to solve the problem. It should be suitable for showing to classes in sociology, economics and related interests as well as to medical students. It would also be useful for any age group and would be particularly helpful as a means of opening adult discussions on the problems of an aging population. The photography, narration and direction are excellent.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Written.* Various locations, July 21. *Oral.* Chicago, Oct. 8-11. Sec., Dr. Curtiss B. Hickcox, 745 Fifth Ave., New York 22.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Written.* Various locations, Sept. 14. *Oral.* Detroit, Oct. 20-22. Sec., Dr. George M. Lewis, 66 East 66th St., New York 21.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written.* Oct. 16. Asst. Sec., Dr. William A. Werrell, 1 West Main Street, Madison 3, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: Chicago, Oct. 1950. Applications no longer accepted. Sec., Dr. W. J. German, 789 Howard Ave., New Haven, Conn.

AMERICAN BOARD OF OPHTHALMOLOGY: *Written.* Various Centers, Jan. 5-6, 1951. San Francisco, March 11-15; New York, May 31-June 4. Sec., Dr. Edwin B. Dunphy, 56 Ivie Road, Cape Cottage, Maine.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: *Part II.* Chicago, Jan. 25-26. Final date for filing applications is Aug. 15, 1950. Sec., Dr. Harold A. Sofield, 122 South Michigan Avenue, Chicago 3.

AMERICAN BOARD OF OTOLARYNGOLOGY: Chicago, October. Sec., Dr. Dean M. Lierle, University Hospital, Iowa City.

AMERICAN BOARD OF PATHOLOGY: St. Louis, Oct. 13-14. Sec., Dr. Robert R. Moore, 507 Euclid Ave., St. Louis 10.

AMERICAN BOARD OF PEDIATRICS: *Oral.* Chicago, Oct. 13-15 and Boston, Dec. 1-3. Exec. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

AMERICAN BOARD OF PHYSICAL MEDICINE AND REHABILITATION: *Oral and Written.* Boston, Aug. 26-27. Final date for filing applications is April 1. Sec., Dr. Robert L. Bennett, 30 N. Michigan Ave., Chicago.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: Next examination, December 1950. Final date for filing applications is Sept. 1.

AMERICAN BOARD OF SURGERY: *Written.* Various centers, Oct. 25 Final date for filing applications is July 1. Sec., Dr. J. Stewart Rodman, 225 South 15th Street, Philadelphia.

AMERICAN BOARD OF UROLOGY: Chicago, Feb. 10-14, 1951. Final date for filing applications is Sept. 1, 1950. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 21.

BOARDS OF MEDICAL EXAMINERS

ALASKA:* Juneau, Sept. 5. Special examinations given on application. Sec., Dr. W. M. Whitehead, Box 140, Juneau.

ARIZONA:* Phoenix, July 22. Sec., Dr. J. H. Patterson, 316 W. McDowell Road, Phoenix.

CALIFORNIA: *Examination, Written.* Los Angeles, Aug. 21-24; Sacramento, Oct. 16-19. *Examination, Oral and Clinical for Foreign Medical School Graduates.* Los Angeles, Aug. 20; San Francisco, Nov. 12. *Reciprocity, Oral Examination.* Los Angeles, Aug. 19; San Francisco, Nov. 11. Sec., Dr. Frederick N. Scatena, 1020 N Street, Sacramento 14.

CONNECTICUT:* *Examination.* Hartford, July 11-12. Sec. to the Board, Dr. Creighton Barker, 160 St. Ronan St., New Haven. *Homeopathic.* Derby, July 11-12. Sec., Dr. Donald A. Davis, 38 Elizabeth St., Derby.

DELAWARE: *Examination.* Dover, July 11-13. *Reciprocity.* Dover, July 26. Sec., Dr. J. S. McDaniel, 229 S. State St., Dover.

HAWAII: *Examination.* Honolulu July 10-13. Sec., Dr. I. L. Tilden, 1020 Kapiolani St., Honolulu.

IDAHO: Boise, July 10. Sec., Mr. Armand L. Bird, 305 Sun Bldg., Boise.

MAINE: *Examination and Reciprocity.* Augusta, July 11-12. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

MASSACHUSETTS: *Examination.* Boston, July 11-14. Sec., Dr. George L. Schadt, Room 37, State House, Boston 33.

NEVADA: *Endorsement.* Carson City, August 7. Sec., Dr. George H. Ross, 112 Curry Street, Carson City.

NEW HAMPSHIRE: Concord, Sept. 13. Sec., Dr. John Samuel Wheeler, 107 State House, Concord.

NEW MEXICO:* Santa Fe, Oct. 9-10. Sec., Dr. Charles J. McGoey, Coronado Building, Santa Fe.

NORTH DAKOTA: *Examination.* Grand Forks, July 5-7. *Reciprocity.* Grand Forks, July 8. Sec., Dr. C. J. Ghasrel, Grafton.

OREGON:* *Examination.* Portland, July 6-8. *Endorsement,* Portland, July 28-29. Sec., Mr. Howard I. Bobbitt, 609 Failing Building, Portland.

PENNSYLVANIA: *Examination.* Philadelphia and Pittsburgh, July 11-14. Act. Sec., Mrs. Marguerite G. Steiner, 351 Education Bldg., Harrisburg.

PUERTO RICO: *Examination.* Santurce, Sept. 5. Sec., Mr. Luis Cueto Coll, Box 3717, Santurce.

RHODE ISLAND:* *Examination.* Providence, July 6-7. Sec., Mr. Thomas B. Casey, 366 State Office Building, Providence.

SOUTH DAKOTA:* Sioux Falls, July 18-19. Sec., Dr. C. E. Sherwood, 300 First National Bank Bldg., Sioux Falls.

WASHINGTON:* Seattle, July 17-19. Director, Department of Licenses, Mr. Edward C. Dohm, Olympia.

WEST VIRGINIA: *Examination.* Charleston, July 10-12. Sec., Dr. N. H. Dyer, Capitol Bldg., Charleston.

WISCONSIN:* Milwaukee, July 11-13. Sec., Dr. C. A. Dawson, River Falls.

* Basic Science Certificate required

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ALASKA: *Examination.* Juneau, last week in August. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

COLORADO: *Examination.* Denver, Sept. 13-14. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver 3.

FLORIDA: Jacksonville, Nov. 11. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

IOWA: *Examination.* Des Moines, July 11. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

MICHIGAN: *Examination.* Ann Arbor, Oct. 13-14. Sec., Miss Eloise LeBeau, 101 North Walnut Street, Lansing 15.

NEBRASKA: *Examination.* Omaha, Oct. 3-4. Director, Mr. Oscar F. Humble, Room 1009, State Capitol Building, Lincoln 9.

NEW MEXICO: *Examination.* Santa Fe, Sept. 17. Sec., Mrs. Marguerite K. Cantrell, Box 1522, Santa Fe.

OKLAHOMA: *Examination.* Oklahoma City, Sept. 15. Sec., Dr. Clinton Gallaher, 813 Braniff Building, Oklahoma City.

RHODE ISLAND: *Examination.* Providence, August 9. Chief, Division of Professional Regulation, Mr. Thomas B. Casey, 366 State Office Building, Providence.

TENNESSEE: *Examination.* Memphis, July 7-8. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis 3.

TEXAS: *Examination.* Austin, October. Sec., Brother Raphael Wilson, 306 Nalle Building, Austin.

WASHINGTON: *Examination.* Seattle, July 12-13. Director, Department of Licenses, Mr. Edward C. Dohm, Olympia.

Bureau of Medical Economic Research

MEDICAL ECONOMIC REVIEWS AND ABSTRACTS

Prepared by the Staff of the Bureau of Medical Economic Research

Maternity in Great Britain: A Survey of Social and Economic Aspects of Pregnancy and Childbirth Undertaken by a Joint Committee of the Royal College of Obstetricians and Gynaecologists and the Population Investigation Committee. Cloth. Price, $4. Pp. 252. Oxford University Press, 114 5th Ave., New York 11; Amen House, Warwick Sq., London, E.C.4, 1948.

The survey in Great Britain of the costs of pregnancy and of the uses made of the maternity services was undertaken for two reasons: First, the National Health Service Act is remodeling the health services of Great Britain and existing circumstances and needs of the maternity services must be taken into account or the new services will merely continue the conditions of the past; Second, Britain's fertility rate has fallen dramatically since the 1870's. Many attribute the high medical and other costs associated with childbirth as a deterrent to parenthood in all classes of society.

The main questions to be answered by the survey were the availability, use and effectiveness of the maternity services to all classes and regions of the country; the need and availability of domestic help during pregnancy and confinement, and the nature and amount of expenses associated with childbirth. These aspects of maternity were studied in relation to type of local authority and geographic region, to order of birth, to social group as determined by the occupation of the husband and to the degree of crowding of the household as measured by the number of persons per room.

The health visitors of the local authorities carried out this survey of all mothers who were delivered in England, Scotland and Wales during a week of 1946 by questioning them eight weeks after the delivery. The information obtained by this sampling method and by area studies of five local authorities indicated the conditions encountered by all mothers in Britain in 1946, conditions assumed to be unchanged at the present.

There has been rapid expansion in the number of antepartum services since the foundation was laid by the 1918 Maternity and Child Welfare Act, which "confirmed and extended the permissive powers of local authorities to establish antenatal clinics, educational classes, dental treatment, and home visiting for expectant mothers, and allowed local authorities to provide food and milk, free or at reduced price, for those in need of it during pregnancy." According to the survey, 0.9 per cent of the women of Britain did not receive any antepartum supervision; 72.9 received supervision provided by the local authorities at clinics, through general practitioners' schemes and through home visits by municipal midwives and health visitors, and 26.2 per cent of the women received antepartum care through private "specialists," practitioners and midwives. Municipal antepartum care, given largely at clinics, was felt to be more effective than private care, but, at the same time, private practitioners and midwives did fill definite needs in rural areas and for unmarried or working mothers and for those with large families. Although the exact relationship has not been determined, it was shown that early antepartum care is associated with decreasing incidence of prematurity and neonatal death and with increasing incidence of breast feeding. Even under the most favorable economic conditions, less than half of the expectant mothers sought the full benefits of supervision by beginning routine clinic attendance during the first three months of pregnancy.

Although the Ministry of Health has encouraged it, only 5.4 per cent of the women questioned were confined in public assistance hospitals, general hospitals, maternity homes and nursing homes. The main factors other than birth order and type of local authority which influenced the place of confinement were social class and domestic responsibilities. Of the women confined in hospitals, 56 per cent were there because of unsuitable home conditions or need for medical care, against only 17 per cent there through preference. Chief complaints of care during confinement among those attending hospitals were the lack of privacy during labor and delivery, limitation of visiting hours, unnecessarily early waking hours and lack of individual attention.

Although private practitioners were in charge of 32 per cent of home confinements, in many cases they did not actually carry out delivery. In hospitals, delivery by physicians was even less frequent than among women confined at home.

The main complaint made by the women answering the questionnaires was the lack of relief from pain during childbirth. Only 52 per cent of those delivered in hospitals and 20 per cent of those delivered at home received any form of analgesia or anesthetic. Expectant mothers were more likely to receive analgesia if it was a first birth, if they lived in rural areas or if they were attended by physicians. The shortage of midwives trained to administer analgesia, defective equipment and lack of transportation facilities for the necessary equipment were among the factors limiting the use of analgesia.

An important aspect of childbirth is the heavy expenditure. Although many of the differences between social classes were minimized by price control and rationing, the well-to-do wives spent on an average of £57 and the manual workers' wives £31 on first births. With subsequent births all groups spent less, with greater economizing in the lower classes. National Insurance Act maternity allowances provided for only a small proportion of the total costs of having a child. Under the National Health Service Act all mothers are entitled to free confinement care through municipal domiciliary services and in public wards of hospitals. Even this will not substantially reduce childbirth costs, as confinement costs are small in relation to the costs of clothing and equipment for the child.

Other aspects covered by this survey included postnatal care, infant welfare clinics, prematurity, infant feeding, expectant mothers in gainful occupations, help in the home and illegitimacy.

Several general recommendations were made in addition to the specific ones made in reference to each aspect of the survey. It was emphasized that there is need for each patient to receive continued care by a single physician. It was pointed out that, although it is necessary to make childbirth safe, attention should also be paid to the material and psychologic needs of expectant mothers.

Further studies have been suggested to increase the value of the present one. Regular collection of statistical data should be continued as a check on the efficiency of the maternity services. The most important aspects of prenatal care should be determined. The relation of employment to incidence of prematurity and stillbirth should be investigated. In future studies the health of the mothers and infants should be observed for a period longer than the two months of the present survey.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Validity of Contract in Restraint of Professional Practice.—The plaintiff physician filed suit for an injunction to restrain a former associate from engaging in the practice of medicine in violation of the terms of a written contract. From a judgment in favor of the plaintiff, the defendant appealed to the Supreme Court of Kansas.

The defendant, a young doctor from Chicago seeking a location, contacted the plaintiff, a physician and surgeon with a well established practice in the city of Hutchinson, Kan. The plaintiff was 69 years of age and anxious to secure a good young doctor who would relieve him of some of his heavy responsibilities. After a visit and conference together, the defendant agreed to enter into the practice of medicine with the plaintiff in Kansas and a written contract was executed. Among other things, this contract provided: "It is further understood and agreed by and between the parties hereto that this agreement may be terminated at any time by either party on giving the other one month's notice in writing; and further, that on termination of this agreement and failure on the part of the parties hereto to agree and enter into a partnership agreement as aforementioned that second party [defendant] will not engage in the practice of medicine or surgery within a radius of 100 miles from Hutchinson, Reno County, Kan., for a period of ten years from the date of this agreement." After the execution of this contract, in December 1947, the defendant returned to Chicago, and on Feb. 1, 1948 he returned to Hutchinson and started work pursuant thereto. It appeared that the plaintiff was in every way satisfied with the defendant's progress and that the defendant was a good young physician. In November 1948 the parties commenced to discuss terms of a proposed partnership agreement. Quite naturally, said the Supreme Court, each of them sought to protect his own interests as he viewed them. The trial court found that each of them acted in good faith. The unfortunate but important fact, in view of the terms of the contract, is that they did not agree on the terms of the contemplated future agreement. They did not agree by December 1948 or by February 1949. By mutual agreement the defendant remained on a salary basis while the parties continued in their efforts to reach an agreement. Failing in such effort, the defendant left the plaintiff on March 2 and started his own practice in the city of Hutchinson. The plaintiff informed the defendant by letter that if he engaged in the practice in violation of the contract he would be obliged to seek legal redress to protect his interests. The defendant, however, continued his practice. Being a competent young physician and having ingratiated himself with the plaintiff's patients it was quite natural a substantial number of them should follow him. Accordingly the plaintiff's practice suffered.

The defendant first contended that the contract was not fairly and equitably entered into. The trial court resolved the issue against the defendant's contention. On appellate review, said the Supreme Court, this court is concerned with evidence which supports the findings made and not with evidence contrary thereto. Notwithstanding this recognized rule, we have studiously examined the entire record. There is ample evidence to support the finding and conclusion of the trial court on this issue, and we cannot disturb it. The defendant's argument is based on the theory that the words "upon termination of this agreement" cannot be interpreted to mean "upon expiration of this agreement" and that the word "termination" can apply only in the event a thirty day notice to terminate the contract had been given. The trial court disagreed with that interpretation. It took the position that the contract, considered as a whole, was intended to mean that if the contract expired or was discontinued for any reason, and no partnership agreement was entered into by the parties, the restrictive provision should apply. We think, said the Supreme Court, the trial court was correct in concluding that the defendant's interpretation of the word "termination" was too narrow and that the restrictive provision did apply.

The real question in the lawsuit, said the Supreme Court, is the validity of the restraint imposed on the defendant by virtue of the restrictive covenant. In a prior case determined by the Supreme Court of Kansas, it was said that the real question is never whether there is any restraint of trade but always whether the restraint is reasonable in view of all the facts and circumstances and whether it is inimical to the public welfare. If it is reasonable and does not contravene public welfare, the contract will be upheld.

The defendant contended that the restraint in the instant case, covering a 100 mile radius, was unreasonable and therefore the entire contract invalid and no part of it enforceable. There is no doubt that the practice of some physicians and surgeons extends over territory far beyond a 100 mile radius from the place of their residence, said the Supreme Court. Was the 100 mile radius reasonable here? We need not answer, said the Supreme Court. The trial court believed that the defendant could be reasonably protected in his practice of medicine and surgery by reducing that territory as follows: ". . . the city of Hutchinson, Kan., and within five miles from said city as now constituted, and in the hospitals or elsewhere in such space or territory. . . ." In rendering this judgment the trial court followed authorities which adopt the doctrine that courts of equity should and will enforce restrictive covenants to a territorial extent reasonably necessary to afford protection to an established business or profession but no further.

The defendant then argued that the word "from" in the provision "within a radius of 100 miles from Hutchinson" did not bar him from practice within the city of Hutchinson. That is the city, said the Supreme Court, in which the parties were practicing. Manifestly they intended to contract with regard to it. A contract should be read and construed in the light of the intention of the parties at the time it was entered into, if possible, without doing violence to it. We have no doubt, the court continued, that the parties intended the defendant should not be permitted to practice within the city of Hutchinson or anywhere else within a radius of 100 miles from the city. Whether the beginning point of the measurement be fixed at the center, or at the outer edge, of the city obviously becomes immaterial. It would embrace this city in either case.

The subject of public policy as applicable to cases of this precise character is fully discussed in many cases, said the Supreme Court. The instant contract is not violative of any positive statute or well established rule of law. It is the duty of courts to sustain the legality of contracts in whole or in part when fairly entered into, if reasonably possible to do so, rather than to seek loopholes and technical legal grounds for defeating their intended purpose. It also has been said, and we think rightly, that the paramount public policy is that freedom to contract is not to be interfered with lightly. There is no attempt at monopoly here, said the Supreme Court. Every other physician and surgeon is at liberty to practice within the territory involved, and we can find no reasonable basis for disturbing the trial court's finding and conclusion on the ground of public policy. Accordingly the judgment of the trial court in granting the plaintiff an injunction restraining the defendant from continuing to practice in Hutchinson, Kan., was affirmed.—*Foltz v. Struxness, 215 P. (2d) 133 (Kansas, 1950).*

CURRENT MEDICAL LITERATURE

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in Continental United States and Canada for a period of five days. Three journals may be borrowed at a time. Periodicals are available from 1939 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, Chicago

33:175-342 (Feb.) 1950

*Prevention of Retinal Venous Occlusion, with Special Reference to Ambulatory Dicumarol Therapy. B. A. Klien.—p. 175.
Gonioscopic Observations During Evolution of Acute Iridocyclitis. J. François.—p. 185.
Present Status in Treatment and Prevention of Trachoma. M. Hirschfelder.—p. 188.
*Keratoconjunctivitis Sicca: Review with Survey of 121 Additional Cases. J. W. Henderson.—p. 197.
Polysaccharides in Ocular Tissue. R. Day.—p. 224.
Megalopapilla: New Congenital Anomaly. A. Franceschetti and R. H. Bock.—p. 227.
Psychology of Poor Reader. W. H. Crisp.—p. 235.
Studies of Eye in Old Age: II. Hole in Macula: Clinico-Pathologic Study. A. L. Kornzweig and M. Feldstein.—p. 243.
Hole in Macula. L. J. Croll and M. Croll.—p. 248.
Histochemical Localization of Cholinesterase in Ocular Tissues. G. B. Koelle and J. S. Friedenwald.—p. 253.
Dehydroascorbic Acid—Ascorbic Acid in Aqueous Humor of Rabbits. V. E. Kinsey.—p. 257.
Cyanide Sensitivity and Cytochrome-C Content of Crystalline Lens. L. O. Ely and W. A. Robbie.—p. 269.
Aureomycin in Ophthalmology. J. G. Bellows, V. M. Richardson and C. J. Farmer.—p. 273.
Enucleation and Allied Procedures: III. New Procedure Involving Use of "Exoplant." J. S. Guyton.—p. 283.

Prevention of Retinal Venous Occlusion.—According to Klien increased blood volume, high viscosity, slowing of the blood flow and easy coagulability of the blood may be some of the predisposing factors in retinal venous occlusion. Subjective symptoms are intermittent visual obscurations or a slight constant reduction of the central visual acuity for which no apparent reason can be found. Engorgement of the venous tree or portions of it and edema of the corresponding sectors of the optic papilla and/or of the retina along the involved veins are the objective signs of gradually developing impairment of venous circulation. Preventive anticoagulant therapy has two main objectives, to gain time for the development of patent collateral channels and to permit repair of damaged venous endothelium by reducing strain on the vessel wall. The length of time over which preventive administration of dicumarol® is used is of greater importance than a radical reduction of the prothrombin level to 20 or 25 per cent, as is necessary for curative purposes. The preventive management may be started with curative doses, consisting of 400 mg. as the first dose, 100 mg. for the following three days and 50 mg. daily for the following four days during the patient's initial period of hospitalization. Dicumarol® may be combined with heparin in selected cases to utilize the latter's inhibitory influence on fibroblastic growth. Dicumarol® treatment may be continued while the patient is ambulatory with a prothrombin level of 50 per cent for many months or years. The cumbersome necessity for frequent prothrombin determinations is counterbalanced by the inexpensive and easy oral administration of the drug. The time required for effective treatment with dicumarol® differs, depending on the severity of the initial symptoms.

Keratoconjunctivitis Sicca.—Henderson reports on 121 patients with keratoconjunctivitis sicca who were admitted to the Mayo Clinic during the period 1938 to 1946. Seventeen of these were male, and the average age among them at the time of onset of symptoms was 47.1 years. There were 104 female patients. Their symptoms developed between the ages of 40 and 60, although 37 women presented symptoms before the onset of the menopause. Dryness, burning or smarting, scratching and excess of a typical mucoid secretion were the most frequent symptoms. A definite sign, although variable in degree, was the diminution in the production of tears. The Schirmer test remains the most practical for determining this important sign, but the diagnosis should not be made on the basis of this test alone. Minute breaks in the surface of the cornea, gray foci of various shapes and size and threadlike filaments were the most important clinical features observed in the corneas. About 40 of the 121 patients had the distinctive features of Sjögren's syndrome, namely, keratoconjunctivitis sicca, xerostomia, pharyngitis sicca, laryngitis sicca, rhinitis sicca and enlargement of the parotids. Only 11 of these 40 patients had arthritis, and only 20 of the total 121 patients presented definite evidence of arthritis. The author believes, contrary to the opinion of other workers, that arthritis is a rather incidental observation and not an integral part of the symptom complex. Thirty patients were followed for one and a half to ninety-six months after electrocoagulation of the puncta and canaliculi, but relief from the ocular symptoms or improvement of the eyes were evidenced in only 10. Keratoconjunctivitis sicca seems to be but one phase of a disease which affects both eyes with approximately equal intensity and which is caused by an altered function of the lacrimal glands of unknown etiology. The treatment of this annoying and sometimes disabling eye condition must remain on a symptomatic basis until the etiologic problems are answered. Its distribution among both sexes and various age groups is probably more common than has heretofore been realized.

American Journal of Physiology, Baltimore

160:217-440 (Feb.) 1950. Partial Index

Antagonism of Adrenocorticotrophic Hormone and Adrenal Cortical Extract to Desoxycorticosterone: Electrolytes and Electroshock Threshold. D. M. Woodbury, Chi-Ping Cheng, G. Sayers and L. S. Goodman.—p. 217.
Influence of Variation in Environmental Temperature and Thyroid Status on Growth and Feed Consumption of Male Mouse. M. Maqsood and E. P. Reineke.—p. 253.
Emotional Hypothermia in Rabbits. R. Grant.—p. 285.
Do Kangaroo Rats Thrive When Drinking Sea Water? B. Schmidt-Nielsen and K. Schmidt-Nielsen.—p. 291.
Water and Electrolyte Distribution in Blood and Tissues in Splenectomized Dogs Before and After Hypotonic Saline Injections. L. Eichelberger and M. Roma.—p. 295.
Relation of Glomerular Filtration Rate and Sodium Tubular Rejection Fraction to Renal Sodium Excretion. D. M. Green, W. C. Bridges, A. D. Johnson and others.—p. 306.
Renal Tubular Elimination of N'-Methylnicotinamide. K. H. Beyer, H. F. Russo, S. R. Gass and others.—p. 311.
Changes in Renal Functions Associated with Diabetes Insipidus Precipitated by Anterior Hypothalamic Lesions. C. A. Handley and A. D. Keller.—p. 321.
Citric Acid and Its Relation to Serum and Urinary Calcium. T. S. Chang and S. Freeman.—p. 330.
Role of Kidney and of Citric Acid in Production of Transient Hypercalcemia Following Nephrectomy. S. Freeman and T. S. Chang.—p. 335.
Antiproteolytic Activity of Serum from Dogs with Experimentally-Induced Peptic Ulcers. E. E. Clifton and I. F. Young.—p. 348.
Anoxia in Explosive Decompression Injury. W. M. Hall and E. L. Corey.—p. 361.
Pressor Substances in Arterial Hypertension: Activity and Amine Content of Crude Extracts of Blood. C. C. Stock and H. A. Schroeder.—p. 409.
Influence of Liver on Vascular Reactivity. I. H. Page.—p. 421.
Relationship of Portal Hypertension and Irreversibility of Shock. R. Cohn and H. Parsons.—p. 437.

American Journal of Public Health, New York

40:119-250 (Feb.) 1950. Partial Index

Mental Health Principles in State and Local Health Program: Commonwealth Fund Demonstration. H. B. Cottrell.—p. 119.
A Health Department Increases Awareness of Its Staff for Mental Hygiene. I. C. Berlien.—p. 126.
Nature of Mental Health Programs in Health and Educational Agencies Under National Mental Health Act—Role of Consultant. H. C. Schumacher.—p. 131.
Attack Rates Among Immigrants to Infected Human Populations. J. Ipsen Jr.—p. 136.
Apparent Decline in Tuberculous Infection Among Household Associates of Sputum-Positive Cases of Tuberculosis. W. R. Ames and H. C. Miles.—p. 143.
British National Health Service: Role of Health Officer. J. A. Scott. —p. 151.
*Chemicals Introduced in Processing of Foods. F. C. Bing.—p. 156.
British National Health Service: General Practitioner Services. J. S. Collings.—p. 165.
Health—Twenty Years Late: Case-Study in Public Administration. S. S. Kasvar, L. Florio and J. P. Dixon.—p. 170.
Investigation of Smog Incident in Donora, Pa., and Vicinity. J. G. Townsend.—p. 183.
Special Leaflets for Use in Controlling Toxemia and Excessive Weight Gain in Pregnancy. J. H. Ferguson and A. G. Keaton.—p. 194.

40:251-374 (March) 1950. Partial Index

Voluntary Health Insurance on National Scene: Present Status of Voluntary Health Insurance. M. C. Klem.—p. 260.
Voluntary Health Insurance on National Scene: Group Health Cooperatives. J. Voorhis.—p. 268.
Multiphasic Screening Examinations—Extension of Mass Screening Technique. L. Breslow.—p. 274.
Staphylococcal Food Poisoning: Report of Two Related Outbreaks, and Discussion of Data Presented. M. Feig.—p. 279.
Comparative Study of Media for Detection of Streptococci in Water and Sewage. W. L. Mallmann and E. B. Seligmann Jr.—p. 286.
Brucella Ring Test in Mixed Raw Milk Supplies. H. E. Bremer. —p. 290.
Preliminary Report of Epidemiological Studies on Poliomyelitis and Streptococcal Infections: Lansing Neutralizing Antibody and Antistreptolysin "O" Surveys of California Cities, Texas, North Carolina, Mexico, Pacific Islands, and Japan. W. McD. Hammon, G. E. Sather and N. Hollinger.—p. 293.
Public Health Administration in England. J. A. Scott.—p. 307.
Progress in Meeting Eye Problems of Children. F. M. Foote.—p. 313.
Demonstration Program for Decentralization of Pediatric Education and Services. G. L. Brooks.—p. 317.
Brucella Ring Test: Its Potential Value in Control of Brucellosis. A. V. Hamilton and A. V. Hardy.—p. 321.

Chemicals in Foods.—Bing states that chemicals are added to foods during processing for nutritional or functional reasons, or for both. The chemicals added to enhance the nutritive value of foods include vitamins and minerals. Some ingredients added to foods for functional purposes have nutritional value, as do the various calcium salts. Ascorbic acid added to certain foods as a stabilizer contributes additional small amounts of vitamin C. Lithium chloride in salt substitutes is particularly harmful. Among the chemicals introduced in foods for functional purposes are the wetting agents, emulsifiers, stabilizers, so-called food improvers and preservatives and antioxidants for fats. Some of these are potentially hazardous. The addition of monochloracetic acid to soft drinks, beer and wine has been condemned. Possible hazards involved in the use of thiourea on frozen peaches, on cut apples and to prevent mold in wheat and oranges are discussed. The use of nitrogen trichloride as a bleaching and maturing agent for flour has been discontinued because of possible harmful effects. The use of mineral oil in food products has been prohibited, but instances of violations of this rule have involved popcorn, salad oils and dressings, mayonnaise and a few other food products. There are a number of chemicals being offered for sale to food manufacturers about whose health hazards little is known. Parahydroxybenzoic acid is being offered as a preservative in place of benzoic acid. There is a patent covering a process for the treatment of flour with diluted nitric acid; by this a deep yellow color similar to that of egg yolks is produced, so that a bun or a sweet roll has a better appearance. The author discusses "bread softeners" and emulsifiers and shows that apart from possible harmful effects, their use poses a nutritional problem. If their inclusion in foods encourages or permits the replacement of appreciable amounts of ingredients such as milk, butter, eggs and shortening, there is the possibility that the nature and nutritive quality of foods may be significantly altered.

Angiology, Baltimore

1:1-108 (Feb.) 1950

*Patho-Physiology and Treatment of Lower Leg Stasis Syndrome. G. Bauer.—p. 1.
Present Status of Sympathectomy in Treatment of Vascular Diseases. G. H. Pratt.—p. 9.
Peripheral Arterial Embolism: Study of 330 Unselected Cases of Embolism of Extremities. H. Haimovici.—p. 20.
Gangrene of Heel. S. S. Samuels.—p. 46.
Endarteritis Obliterans (Obliterative Endarteritis). D. W. Kramer. —p. 53.
Prediction of Thromboembolism. L. Loewe, R. P. Lasser and M. Morrisen.—p. 64.
*Lymphedema. G. de Takats and M. H. Evoy.—p. 73.
Arteriographic Examination of Lower Extremity. D. A. Campbell and R. G. Smith.—p. 100.

Lower Leg Stasis Syndrome.—Bauer practiced division and resection of the popliteal vein on 194 patients with a lower leg syndrome of chronic edema, induration, ulceration and pain caused by venous stasis. The erect position in man causes a certain amount of venous overloading in the lower parts of the leg. The superfluous blood is easily removed by contractions of the calf muscles which act as a peripheral heart in healthy persons. This mechanism postulates normal functioning of the valves in the femoral and popliteal veins, but these valves are incompetent in patients with lower leg edema, induration ulceration and bursting pain. The valves of these large veins were destroyed by previous thrombosis or by phlebosclerotic processes. Superfluous blood cannot be effectively removed by contraction of calf muscles, every relaxation of these muscles being immediately followed by a backflow of blood down the valveless main trunk. This results in permanent venous stasis, followed in due time by pain and tissue changes. Popliteal vein division in the form of blocking of the main trunk in the popliteal region has been devised as a remedy for this condition. The calf muscle contractions drive the blood through numerous fine-calibered channels into the muscle veins of the thigh, and backflow cannot occur after the operation, which appeared to be entirely free of risk. Immediate results were good. The time of observation was too short to permit a final evaluation, but a follow-up of 77 patients for one to two and a half years showed encouraging aspects with a smooth after course in the absence of any symptoms of stasis in 63 patients. Relapses occurred after a brief interval in 9 patients who had a small ulcer at the lower end of a leaking communicating vein. There was no return of pain and no generalized edema. Prompt healing resulted from the division of that communicating vein and a sclerosing injection. Treatment failed in 5 patients with serious recurrences.

Lymphedema.—De Takats and Evoy report 150 patients, 35 males and 115 females, with lymphedema. In 28 the condition was classified as congenital, 11 traumatic, 58 inflammatory, 22 degenerative (malignant) and 31 of unknown origin. Cases of thrombophlebitic edema were not included, although a lymphatic component was usually present in the authors' group. This simple classification is of value in understanding the mechanism of lymphedema. With increasing knowledge, the number of cases of unknown origin should gradually fall in one of these groups. The acute, chronic and slowly progressive stages of the disease are important from the standpoint of therapy. Acute lymphedema if treated early and intensively yields rapidly to therapy and leaves the least amount of irreversible edema and fibrosis. Attention is called to the beneficial effects of elevation, elastic compression, mercurial diuresis, heparinization and sympathetic blocks, each having their proper place, used alone or in combination. Roentgen therapy and small doses of typhoid vaccine were employed to decompress the swollen lymph nodes and clear their sinusoids from debris and fibrin deposits. Chronic, late cases cannot be controlled by conservative measures. Excision of the diseased tissues was performed in 28 patients who were followed from one to twenty-five years. The cosmetic results were satisfactory in 17, doubtful in 5 and poor in 6. Congenital lymphedemas in patients with operative treatment early between the ages of 6 and 10 years responded better than edema of the inflammatory type.

Annals of Allergy, Minneapolis

8:1-148 (Jan.-Feb.) 1950. Partial Index

Cottonseed Protein vs. Cottonseed Oil Sensitivity: I. Background and Personal Experience. H. S. Bernton.—p. 1.
Id.: II. Case of Cottonseed Oil Sensitivity. T. G. Randolph and W. N. Sisk.—p. 5.
Id.: III. Atopen Content of Cottonseed Oil. R. S. McGrath.—p. 11.
Id.: IV. Objective Approach to Diagnosis of Food-Allergy as Applied to Cottonseed Atopy. M. H. Loveless.—p. 15.
Id.: V. Cottonseed Asthma; Protein vs. Oil. J. H. Mitchell.—p. 23.
Idioblaptic Allergy as Implementing Background Factor in Anterior Poliomyelitis: Exploratory Study. A. P. Locke and A. F. Coca. —p. 26.
Clinical Evaluation of Chlorcyclizine (Perazil). E. A. Brown, L. A. Fox, J. P. Maher and others.—p. 32.
*Multiple Sclerosis and Allergy Management with Histamine Therapy: Part II. H. D. Jonez.—p. 44.
Standardized Patch Test. L. Schwartz.—p. 63.
Parenteral Use of Neo-Antergan: Clinical Study. J. Miller.—p. 68.
Allergic Toxemia and Fatigue. A. H. Rowe.—p. 72.
Mercuhydrin Sensitivity: Report of Case. A. H. Fineman and S. J. Rosenberg.—p. 80.
Oral Procaine Hydrochloride Therapy in Asthma. M. M. Schapiro and M. Sadove.—p. 83.
Enteric-Coated Antihistaminics. S. W. Simon.—p. 90.
Emotional Traumata Preceding Onset of Allergic Symptoms in Group of Children. H. Miller and D. W. Baruch.—p. 100.
Remarks on Theories of Antibody Formation. A. Rostenberg Jr. and M. J. Brunner.—p. 108.
Clinical Evaluation of Thenylpyramine Hydrochloride (Histadyl) in Treatment of Allergic Symptoms. E. Schwartz, L. Levin and M. Wallman.—p. 117.
Pulmonary Fibrosis Complicating Allergic Asthma. G. L. Waldbott. —p. 120.
Epinephrine in Treatment of Migraine. P. A. Sperber.—p. 126.

Histamine Therapy in Multiple Sclerosis.—Jonez states that nearly all of 152 patients with multiple sclerosis showed some form of allergic sensitivity. Those with multiple food allergies apparently were more spastic than those with other allergies. It is generally conceded that foods are the worst offenders in cerebral allergies. Histamine was given subcutaneously, intravenously or by iontophoresis. Administration by iontophoresis was begun only after a large number of intravenous injections had been given. At present 62 patients are being treated by histamine iontophoresis at the author's hospital. The exacerbations of multiple sclerosis are reduced in number under the allergy management and histamine therapy, and the remissions are lengthened. Some form of histamine therapy is indicated for the balance of the patient's life. The earlier treatment is started the more successful it is. In the chronic cases varying degrees of improvement occur and continue as long as the patient continues treatment. Histamine therapy does not cure the disease but merely arrests symptoms. Patients who had been bed-fast were able to use a wheel-chair or even became ambulatory. In others, all symptoms subsided and exacerbations were absent for over two years.

Annals of Western Medicine & Surgery, Los Angeles

4:107-154 (March) 1950

*Resection of Bladder, Rectum and Vagina for Recurrent Carcinoma of Cervix. W. H. Boyd.—p. 113.
Myocarditis and Simulating Conditions. E. L. Coodley.—p. 116.
Complete Heart Block with Auricular Flutter: Report of Case. D. B. Hinshaw and H. J. Hoxie.—p. 124.
Principles of Therapy of Alcoholic Patients. J. D. Moriarty and A. W. Pearson.—p. 127.
Facial Characteristics of Infants with Bilateral Renal Agenesis: Report of Case. J. Vaughn.—p. 131.
Problems of Peptic Ulcer. S. M. Jordan.—p. 133.
All Silk Versus All Catgut Technic in Thyroidectomy. D. C. Collins. —p. 136.
Oil Anesthetics in Surgical Incisions. N. P. Plechas.—p. 137.
Treatment of Dysmenorrhea. E. M. Robertson.—p. 140.

Resection of Bladder, Rectum and Vagina for Recurrent Carcinoma of Cervix.—Boyd reports the case of a 26 year old woman, who in 1946 complained of a profuse vaginal discharge with intermenstrual bleeding during the preceding year and a weight loss of 26 pounds in that period. Biopsy revealed a squamous cell carcinoma of the cervix. Since irradiation produced no change in the macroscopic appearance of the cervix, a Wertheim operation was performed, which confirmed the diagnosis. Radiation therapy was resumed, but the patient had increasing bladder and rectal pains. Because of the patient's age, severe pain and discomfort, it was thought advisable to do an exploratory laparotomy with the view of performing resection of the bladder and rectum in the absence of metastasis outside the pelvis. After catheters were placed in the ureters, the abdomen was opened and explored through a low midline incision. There was no evidence of metastatic involvement of the abdominal organs or of the lymph nodes. The bladder, rectum and vagina were removed en masse. The woman was operated on three more times: for a urinary fistula that developed in January 1948, for a fecal fistula that developed in July 1948 and for a recurrence of the fecal fistula in March 1949. Biopsies at each of these operations failed to show malignant changes. At present her weight is normal and she is doing most of her housework. She uses a colostomy bag. The case demonstrates the practicability of an extensive surgical procedure for the treatment of recurrent carcinoma of the uterine cervix. Additional time is required to determine whether the operation will eradicate the disease.

Archives of Internal Medicine, Chicago

85:365-544 (March) 1950

*Effects of Delta 5 Pregnenolone in Rheumatoid Arthritis. R. Davison, P. Koets, W. G. Snow and L. G. Gabrielson.—p. 365.
Is There a Relation Between Diet and Blood Cholesterol? C. F. Wilkinson Jr., E. Blecha and A. Reimer.—p. 389.
Concentrations of Cholesterol, Total Fat and Phospholipid in Serum of Normal Man: Report of Study with Special Reference to Sex, Age and Constitutional Type. V. Kornerup.—p. 398.
*Lower Nephron Nephrosis: Report of Treatment of 44 Patients by Repeated Replacement Transfusions. J. Dausset.—p. 416.
Hypertensive Cardiovascular Disease (Acute) (Malignant Hypertension): Clinical and Pathologic Study of 39 Cases. J. E. Koepsell, J. F. Kurma and F. D. Murphy.—p. 432.
Acute Porphyria: Report of Case. C. H. Gray.—p. 459.
*Hyperthyroidism: Treatment with Radioactive Iodine. S. Feitelberg, I. S. Kaunitz, S. Silver and others.—p. 471.
Hypermetabolic States Without Hyperthyroidism (Nonthyrogenous Hypermetabolism). S. Silver, P. Poroto and E. B. Crohn.—p. 479.
Pulmonary Nodules Associated with Mitral Stenosis. S. H. Sahn and I. Levine.—p. 483.
Lutembacher's Syndrome Associated with Dextrocardia. I. Innerfield. —p. 490.
Syphilis: Review of Recent Literature. H. Beerman, L. Nicholas, M. S. Buerk and W. T. Ford.—p. 496.

Pregnenolone in Arthritis.—Davison and co-workers administered the synthetic steroid delta 5-pregnen-3-beta-ol-20-one (pregnenolone) by the intramuscular route to 7 men and 5 women with rheumatoid arthritis or spondylarthritis. No obvious effects were observed from daily administration of 50 mg. of the drug. Many patients responded promptly to 100 mg., whereas others needed 200 mg. daily. Experience indicated that 200 mg. is the adequate daily dose effecting remission in rheumatoid arthritis. Symptoms and signs of active disease return, usually within a few days, when the drug is withdrawn. Toxic effects have not been demonstrated from daily injection of the drug over a four month period.

Lower Nephron Nephrosis.—Dausset treated 44 patients with the anuric phase of lower nephron nephrosis by repeated replacement transfusions. Twenty-nine of the 44 patients recovered. Replacement transfusion proved particularly effective in patients with acute total renal failure due to the presence in the blood stream of (1) a nondialyzable heme pigment as in transfusion incompatibility, massive hemolysis, crush syndrome and burns or (2) a poison such as mercury linked with a nondialyzable protein. Experience proved the efficiency of this method in severe cases of hemolytic septicemia due to Clostridium perfringens, presenting nervous and hemorrhagic signs. The purpose of replacement transfusion is to remove nonprotein nitrogen from the body. Study of the decrease in the level of blood urea nitrogen after replacement transfusion revealed that urea nitrogen balance may be obtained with the transfusion of a quantity of blood equal to the total blood volume of the patient. Transfusion of a quantity equal to twice the blood volume may lower the blood urea nitrogen by 33 per cent from the beginning to the end of the procedure and by 25 per cent the day after the procedure. The quantity of blood and the number of repeated replacement transfusions required should be calculated accordingly. Replacement transfusions resulted in striking improvement of the patient's general condition because

of the improved humoral balance and the correction of anemia. Alternative use of replacement transfusion and peritoneal irrigation seems to be advisable in many cases.

Radioactive Iodine in Hyperthyroidism.—Feitelberg and co-workers treated 38 men and 146 women who had hyperthyroidism with radioactive iodine (I^{131}). One hundred and fifty of the 184 patients had toxic diffuse goiter and 28 had adenomas. The average quantity of I^{131} used was 8.2 millicuries, with a maximum initial dose of 11 millicuries and a minimum effective dose (after operation) of 1.7 millicuries. The average dose was about 10,000 roentgen equivalents, or about 80 microcuries taken up per gram of the thyroid. One hundred and thirty-two patients were cured with a single dose of I^{131}, 43 required a second treatment and 9 had three irradiations. The average pulse rate, which was 120 before therapy, was 75 after the treatment. Only 6 patients had atrial fibrillation after irradiation, as compared to 18 before therapy. Radiation sickness was not observed, nor was there any effect on the peripheral blood. Post-therapeutic hypothyroidism occurred in 13 patients and lasted from five to twenty-one months. This was readily controlled with desiccated thyroid in daily doses of 15 to 200 mg. Two of 3 patients with progressive exophthalmos before treatment continued to show progressive exophthalmos. Internal radiation with I^{131} is the treatment of choice in toxic diffuse goiter because of the simplicity of the method, the absence of important complications and the satisfactory results. Its use should be reserved for those patients with toxic adenoma to whom surgical intervention is not applicable because of coincidental disease which would inordinately increase the operative risk.

Archives of Ophthalmology, Chicago

43:197-406 (Feb.) 1950

*Occlusion of Central Retinal Artery Following Anesthesia. I. Givner and N. Jaffe.—p. 197.
Tryptophan Determination in Cataracts Due to Deficiency or Delayed Supplementation of Tryptophan. A. J. Schaeffer and J. D. Murray.—p. 202.
Ophthalmoplegia and Pigmentary Degeneration of Retina. M. Chamlin and E. Billet.—p. 217.
Influence of Age and Sex on Flow of Tears. J. W. Henderson and W. A. Prough.—p. 224.
Tuohy Corneal Lens: Second Report. M. W. Nugent.—p. 232.
Ocular Pemphigus: Report of Case. G. D. Selby and P. J. Parisi.—p. 239.
Ocular Involvement in Erythema Multiforme. A. Patz.—p. 244.
Ocular Fatigue. R. A. Weber.—p. 257.
Hemangioblastoma of Retina (Von Hippel-Lindau Disease). A. Rados.—p. 265.
Slit Lamp Microscopy of Posterior Section of Eye with New Preset Lens. K. Hruby.—p. 330.
Corneal Transplantation: II. Indications and Contraindications. F. C. Stansbury.—p. 337.
High Speed Photography of Anterior Ocular Segment. A. B. Rizzuti.—p. 365.

Occlusion of the Central Retinal Artery Following Anesthesia.—Givner and Jaffe describe 2 cases in which closure of the central retinal artery was observed following cyclopropane-oxygen-ether anesthesia. They noted that the tank and the tubes leading from the mask to the tank were always kept on the right side, a condition which, because of the pulling of the tubes, would make the pressure on the right eye much greater than that on the left eye. One of these patients complained to the anesthetist, during induction of anesthesia, that he was pressing on her right eye. Rundle in 1947 called attention to the occurrence of exophthalmos during anesthesia. With the mask in place and with exertion of slight pressure, the pressure on the eye of one of the authors was raised from 22 to 54 mm. of mercury, as measured with the Schiötz tonometer. Pressure applied for twenty minutes to the sclera of a homatropinized eye of a rabbit under ether anesthesia, resulted in stoppage of all circulation. Edema of the retina and the cornea and segmentation of the blood column in both arteries and veins occurred. On release of the pressure, hemorrhages appeared between the disk and the macula. A similar experiment on a monkey is cited. The authors discuss the possible role played by blood loss and shock in the production of postanesthetic closure of the central retinal artery.

Archives of Pathology, Chicago

49:247-366 (March) 1950

*Relation of Lymphocytic Infiltration of Inflammatory Origin to Angiogenesis. F. Moscheowitz.—p. 247.
Experimental Flash Burns: Pathologic Aspects. L. Hegg, J. T. Payne and H. E. Pearse.—p. 267.
Toxicity Studies on Vitamin B12 in Albino Mice. V. Traina.—p. 278.
*Ovarian Cancer in Mother and Five Daughters. A. F. Liber.—p. 280.
Direct Evidence for Antigenicity of Glomeruli in Production of Nephrotoxic Serums. S. A. Greenspon and C. A. Krahower.—p. 291.
Action of Lysozyme on Gastrointestinal Mucosa. K. J. Wang, R. Grant, H. D. Janowitz and M. I. Grossman.—p. 298.
Intestinal Lipodystrophy (Whipple's Disease) Occurring with Parathyroid Hyperplasia and Nephrosis: Report of Case with Autopsy. L. Odessky and W. R. Burdison.—p. 307.
Cryptococcosis of Central Nervous System and Incidental Cryptococcic Granuloma. L. D. Stevenson, F. S. Vogel and V. Williams.—p. 321.
Needle Biopsy of Liver: V. Observations on Distribution of Alkaline Phosphatase and Its Diagnostic Significance. F. P. Cleveland, D. F. Richfield, E. A. Gall and L. Schiff.—p. 333.

Lymphocytic Infiltration and Angiogenesis.—Moschcowitz presents evidence that autochthonous formation of new blood vessels is the rule in a wide variety of chronic granulomas and that it occurs in the course of a fibroblastic differentiation of the newly formed mesenchyme. This mesenchyme is formed primarily from lymphocytes that exude from blood vessels and to a lesser extent from fixed connective tissue cells which undergo a transformation. The mechanism of the angiogenesis represents a reversion to that which occurs in the embryo. The hyperplasia of the sinuses and the extramedullary blood formation in "congestive" splenomegaly are explainable in this way. One of the functions of the lymphoid cell in chronic inflammation is its potentiality for being transformed into endothelium, and hence for angiogenesis. The newly formed vessels either persist or are destroyed. In the latter case the component cells revert to collagen and eventually to sclerotic connective tissue. The whole is viewed as part of the reparative process inherent in inflammation.

Ovarian Cancer in Mother and Five Daughters.—Liber reports a family in which a mother and five of her seven daughters died of a highly malignant papillary adenocarcinoma of the ovary that spread rapidly to the entire peritoneum. Information is available on five generations of this family. These data and observations in the literature suggest a significantly high familial incidence but are not sufficient to permit a conclusion as to the mode of transmission.

Cancer, New York

3:1-172 (Jan.) 1950. **Partial Index**

Thermal Coagulation of Serum Proteins in Cancer, in Postoperative Phase of Surgery and in Administration of Adrenocorticotropic Hormone. O. Bodansky and G. F. McInnes.—p. 1.
Evaluation of Diagnostic Tests for Cancer: III. Inhibition of Thermal Coagulation of Serum by Iodoacetic Acid (Huggins-Miller-Jensen Test). F. Homburger, P. H. Pfeiffer, O. Page and others.—p. 15.
Investigation of Paramecium Toxicity Test for Detection of Human Malignant Tumors. R. W. Egan.—p. 26.
Index for Rating Diagnostic Tests. W. J. Youden.—p. 32.
*Studies on Effusions: II. Simple Technique for Discovery of Cancer Cells in Neoplastic Exudates. Shu Chu Shen and F. Homburger.—p. 36.
Resectability of Recurrent Gastric Carcinoma. G. McNeer, R. J. Bocher and L. Bowden.—p. 43.
Effect of Neoplastic and Allied Diseases on Concentrations of Plasma Proteins. G. B. Mider, E. L. Alling and J. J. Morton.—p. 56.
Ethyl Carbamate (Urethane) in Treatment of Mycosis Fungoides. B. J. Kennedy, I. T. Nathanson and J. C. Ash.—p. 66.
Metastases in Carcinoma: Analysis of 1,000 Autopsied Cases. H. L. Abrams, R. Spiro and N. Goldstein.—p. 74.
Concentration of I^{126} in Thyroid Cancer, Shown by Radioautography: Study of 100 Consecutive Cases Showing Relation of Histological Structure to Function of Thyroid Carcinoma. P. J. Fitzgerald, F. W. Foote Jr. and R. F. Hill.—p. 86.
Basophilic Substances in Human Liver Cells. D. G. McKay and J. T. Farrar.—p. 106.
Beta-Glucuronidase Activity of White Blood Cells in Human Leukemias and Hodgkin's Disease. A. J. Ashyan, J. Gamble and H. A. Hooter.—p. 116.
Studies on Colchicine Derivatives: I. Toxicity in Mice and Effects on Mouse Sarcoma 180. B. Goldberg, L. G. Ortega, A. Goldin and others.—p. 124.

Discovery of Cancer Cells in Neoplastic Exudates.—Shu Chu Shen and Homburger describe a simple procedure for the preservation of cellular structure and the rapid detection of cancer cells in exudates by means of a modified Wright stain. About 200 cc. of freshly drawn effusion fluid is defibrin-

ated in an Erlenmeyer flask containing forty glass beads. About 20 cc. of the defibrinated fluid is placed in each of two test tubes (⅝ by 5¾ inches [1.59 by 14.1 cm.]) and centrifugated at 3,000 revolutions per minute. The supernatant is pipetted off and discarded. The precipitate is then resuspended by gentle agitation in 2 to 3 cc. of homologous serum or serum previously adsorbed by red cells of groups A and B. This suspension is allowed to stand at room temperature for ten minutes; it is then transferred to a smaller test tube (¾ by 4 inches [.95 by 10 cm.]) and spun once more for five to ten minutes at 3,000 revolutions per minute. The supernatant is again withdrawn and discarded, except for a small amount of serum that is allowed to remain. A drop of the precipitate is taken from the top layer of the sediment and placed on cover slips. After drying, the smears (preferably three to six) are covered with Wright stain to which an equal amount of phosphate buffer of p_H 6.4 is added after five minutes. This is left for another five minutes. The smears are then washed, dried and mounted on a slide for microscopic study. This method was applied to 37 fluid aliquots from 26 patients. A positive result was obtained in 17 of 20 patients with proved cancer. The procedure gave no false-positive results in a limited number of cases and fewer false-negative results than were obtained by Papanicolaou's technic.

Circulation, New York

1:161-320 (Feb.) 1950

Effects of Digoxin upon Heart and Circulation in Man: Digoxin in Chronic Cor Pulmonale. M. I. Ferrer, R. M. Harvey, R. T. Cathcart and others.—p. 161.
Life Stress and Cardiovascular Disorders. H. G. Wolff.—p. 187.
Clinical Studies on Veratrum Alkaloids: I. Action of Protoveratrine and Veratridine in Hypertension. E. Meitman and O. Krayer.—p. 204.
Intermediary Metabolism of Cholesterol. K. Bloch.—p. 214.
Resection of Aneurysm of Arch of Aorta with Preservation of Lumen of Vessel. O. Monod and A. Meyer.—p. 220.
Gangrene of Extremities of Venous Origin: Review of Literature with Case Reports. H. Haimovici.—p. 225.
Mechanism of Auricular Arrhythmias. M. Prinzmetal, E. Corday, I. C. Brill and others.—p. 241.
Subendocardial Infarction: Report of 6 Cases and Critical Survey of Literature. H. D. Levine and R. V. Ford.—p. 246.
Membrane Resting and Action Potentials of Single Cardiac Muscle Fibers. L. A. Woodbury, J. W. Woodbury and H. H. Hecht.—p. 264.
Studies of Congenital Heart Disease: IV. Uncomplicated Pulmonic Stenosis. J. W. Dow, H. D. Levine, M. Ehin and others.—p. 267.
Failure of Alpha Tocopherol to Influence Chest Pain in Patients with Heart Disease. S. H. Rinzler, H. Bakst, Z. H. Benjamin and others.—p. 288.
Dilatation and Pulsation of Left Subclavian Artery in Roentgen-Ray Diagnosis of Coarctation of Aorta: Roentgenkymographic Studies in 13 Cases. H. M. Stauffer and L. G. Rigler.—p. 294.
Use of Tetraethylammonium Chloride in Treatment of Phantom Limb. B. J. Winston.—p. 299.

Endocrinology, Springfield, Ill.

43:549-640 (Dec.) 1949

Study of Origin and Distribution of Antigonadotrophic Substance in Animals Chronically Treated with Crude Sheep Pituitary Extract. C. A. Ely, R. K. Meyer and W. H. McShan.—p. 549.
Induction of Psychic Estrus in Hamster with Desoxycorticosterone Acetate and Its Effects on Epithelium of Lower Reproductive Tract. J. E. Imanese Jr.—p. 558.
Effects of 17-Vinyl Testosterone upon Rat Adrenal. R. A. Lewis, S. de Majo and E. Rosenberg.—p. 564.
*Development of Refractory State to Adrenocorticotrophic Hormone. G. L. Gordon.—p. 571.
Neural Timing Factor in Mechanism by Which Progesterone Advances Ovulation in Cyclic Rat. J. W. Everett and C. H. Sawyer.—p. 581.
Procedure for Study of Factors Which Affect Nitrogen Metabolism of Isolated Tissues: Hormonal Influences. D. L. Kline.—p. 596.
Effect of Adrena. and Thyroid Glands upon Rise of Plasma Amino Acids in Eviscerated Rat. R. K. Bandy.—p. 605.
Effects of Hypophysectomy, Adrenalectomy and of Thiouracil Feeding on Cytology of Brown Adipose Tissue. D. W. Fawcett and I. C. Jones.—p. 609.

Development of Refractory State to Adrenocorticotropic Hormone.—Gordon found that rats which received repeated injections of purified pituitary adrenocorticotropic hormone from hogs (ACTH) gradually became refractory to a test dose of the hormone which depleted consistently the adrenal ascorbic acid concentration of control rats. Their response to the test dose after seven weeks of hormonal injections was negligible. Serum from such rats contained a substance which consistently diminished the adrenal ascorbic acid depletion normally produced in the hypophysectomized rat by the drug. Activity of the antiserum was not demonstrable in vitro by the precipitin technic employed. On a body weight basis, the dosage level of the hormone producing the refractory state in rats is comparable to that which has been used in man in the treatment of rheumatoid arthritis. Chase recently reported that the pure hormonal preparation produced an antihormone in mice which prevented the normal drug-induced increase in adrenal weight in the rat and which could be demonstrated serologically by both precipitin and collodion particle agglutinin technics; the serologic activity of the antiserum could be correlated with its biologic activity. Larger quantities of the hormone than were given in the present study were used by Chase; this may account for her successful demonstration of precipitating antibodies. The clinical implications of the development of an anti-hormone to pituitary adrenocorticotropic hormone are obvious. Long-term therapy may become decreasingly effective.

Journal of Clinical Investigation, Cincinnati

29:141-264 (Feb.) 1950

Serum Vitamin A and Total Plasma Lipid Concentrations as Influenced by Oral Administration of Vitamin A to Children with Nephrotic Syndrome. B. M. Kagan, E. M. Thomas, D. A. Jordan and A. F. Abt.—p. 141.
Peripheral Vascular System in Bulbar Conjunctiva of Young Normotensive Adults at Rest. R. E. Lee and E. A. Holze.—p. 146.
Insulin-Glucose Tolerance Test. Modified Procedure for Detection of Hypoglycemia Unresponsiveness in Pituitary and Adrenal Insufficiency. F. L. Engel and J. L. Scott.—p. 151.
Immunological Studies of Pneumococcal Pneumonia in Patients Treated with Penicillin. W. S. Jordan Jr., G. F. Badger and J. H. Dingle.—p. 161.
Studies of Alkalosis. C. H. Burnett, B. A. Burrows and R. R. Commons.—p. 169.
Diurnal Variations of Renal Function in Man. J. H. Sirota, D. S. Baldwin and H. Villarreal.—p. 187.
Pyridoxine Deficiency in Human Beings Induced with Desoxypyridoxine. J. F. Mueller and R. W. Vilter.—p. 193.
Surface Effects on Blood-Clotting Components as Determined by Zeta-Potentials. I. F. E. Horan, F. G. Hirsch, L. A. Wood and I. S. Wright.—p. 202.
*Tissue Protein Studies in Normal and Undernourished Males: Changes in Total Circulating Protein After Intravenous Saline Infusion as Index of Protein Stores. J. E. Harroun, C. J. Smyth and S. Levey.—p. 212.
Effects and Fate of Human Serum Albumin Administered Intravenously and Orally to Premature Infants. C. A. Smith, K. G. Phillips and R. O. Roth.—p. 218.
Effect of Protein Starvation and of Protein Feeding on Clinical Course, Liver Function and Liver Histochemistry of 3 Patients with Active Fatty Alcoholic Cirrhosis. R. D. Eckhardt, N. Zamcheck, R. L. Soldman and others.—p. 227.
Studies in Methionine Metabolism: III. Fate of Intravenously Administered S^{35}-Labeled-Methionine in Normal Adult Males. In Patients with Chronic Hepatic Disease, "Idiopathic" Hypoproteinemia and Cushing's Syndrome. L. W. Kinsell, S. Margen, H. Tarver and others.—p. 238.
Cardiovascular, Renal and General Effects of Large, Rapid Plasma Infusions in Convalescent Men. J. R. Wilson Jr. and C. R. Harrison.—p. 251.
Comparative Study of Red Cell Volumes in Human Subjects with Radioactive Phosphorus Tagged Red Cells and T-1824 Dye. H. M. Nachman, G. W. James III, J. W. Moore and E. I. Evans.—p. 258.

Tissue Protein and Circulating Protein.—Harroun and associates point out that a normal serum protein concentration may mask an under-nutritional state. Total circulating protein determinations alone may convey an erroneous impression of the subject's nutrition. Shearburn in 1942, following the lead of Calvin, from data obtained in normal and in hypoproteinemic dogs showed that the presence or absence of protein stores could be demonstrated after an intravenous infusion of isotonic sodium chloride solution. These observations with regard to tissue proteins are important in explaining the equilibrium state as set forth by Whipple and have not been included in recent discussions on this subject. The authors determined plasma volume, total circulating proteins and fractions (albumin and globulin) before and after an intravenous infusion of 1 liter of isotonic sodium chloride solution in 6 normal and 9 undernourished subjects. The response to the infusion in the normal subjects was characterized by an increase in plasma volume, an average of 440.7 cc., and an increase in total circulating protein, an average of 13.9 Gm. The response to the saline infusion in the undernourished subjects was characterized by an increase in plasma volume, an average of 169.9 cc., and a decrease in total circulating protein, an average of 14.7 Gm.

Under the influence of intravenous injection of isotonic sodium chloride solution there is a migration of protein either into or out of the circulatory system. The direction of migration depends on the presence or absence of tissue protein stores. In the well nourished person with adequate protein stores the direction of flow is into the blood stream. When the protein stores are depleted, as in the undernourished patient, proteins leave the circulation after the injection of isotonic sodium chloride solution. The authors believe that the intravenous injection of 1,000 cc. of isotonic sodium chloride solution provides a practical method for demonstrating the existence or absence of adequate tissue protein.

Journal of Experimental Medicine, New York

91:115-244 (Feb.) 1950. Partial Index

Circulation of Ascitic Fluid: Interchange of Plasma and Ascitic Fluid Protein as Studied by Means of C^{14}-Labeled Lysine in Dogs with Constriction of Vena Cava. F. W. McKee, W. G. Wilt Jr., R. E. Hyatt and G. H. Whipple.—p. 115.
Studies on Proteolytic Enzyme in Human Plasma: V. Relationship Between Proteolytic Activity of Plasma and Blood Coagulation. O. D. Ratnoff, R. C. Hartmann and C. L. Conley.—p. 123.
Production of Fever by Influenzal Viruses: III. Effect of Receptor-Destroying Substances. R. R. Wagner and I. L. Bennett Jr.—p. 135.
Receptor Destruction by Viruses of Mumps-NDV-Influenza Group. G. K. Hirst. —p. 161.
Studies on Virulence of Tubercle Bacilli: Isolation and Biological Properties of Constituent of Virulent Organisms. H. Bloch.—p. 197.
Determination of Differences in Virulence of Strains of Salmonella Typhosa: Comparison of Methods. H. C. Batson, M. Landy and M. Brown.—p. 219.

Journal of Thoracic Surgery, St. Louis

19:167-332 (Feb.) 1950

*Surgical Management of Chronic "Spontaneous" Pneumothorax: Report on Etiological Factors and Surgical Treatment Employed in 15 Cases. L. A. Brewer III, F. S. Dolley and B. H. Evans.—p. 167.
Segmental Resection in Pulmonary Diseases. J. M. Chamberlain and T. C. Ryan.—p. 199.
Segmental Pulmonary Resection: Details of Technique and Results. R. H. Overholt, F. M. Woods and B. H. Ramsay.—p. 207.
Broncholithiasis. H. W. Schmidt, O. T. Clagett and J. R. McDonald. —p. 226.
Results of Surgery in Bronchiectasis. A. Lambert.—p. 246.
*Surgical Treatment of Bilateral Bronchiectasis. F. G. Kergin.—p. 257.
Thoracoplasty: Study of 56 Consecutive Cases. A. Goldman, J. Segal and L. H. Sherman.—p. 270.
Temporary High Position of Diaphragm. L. Meyler and E. Huizinga. —p. 283.
Transpleural Muscles. L. Allen.—p. 290.
Nonspecific Granulomatous (Regional) Esophagitis. R. H. Franklin and S. Taylor.—p. 292.
Lobectomy and Pneumonectomy in Treatment of Pulmonary Tuberculosis: Subsequent Report. R. H. Sweet.—p. 298.
Successful Removal of Lower Accessory Lung. M. DeBakey, J. B. Arey and R. Brunazzi.—p. 304.
Artificial Aortic Valve: Preliminary Report. J. M. Campbell.—p. 312.
Sodium Tetradecyl Sulfate, Anochloramide and Sulfanilamide Mixture in Prevention of Empyema Following Pneumonectomy with Contamination. H. L. Rigdon and O. C. Brantigan.—p. 319.
Mechanism of Healing of Lung Tissue and Its Reaction to Different Suture Materials. A. R. Valle and G. Mider.—p. 324.

Surgical Management of Chronic "Spontaneous" Pneumothorax.—Spontaneous pneumothorax is not "idiopathic," for a ruptured subpleural cyst, bleb or bulla is usually the cause. The important factors in the persistence of the pneumothorax is the epithelial lining of congenital cysts, the presence of intrapleural adhesions, the scar tissue in the lung or bronchiole and the formation of an inelastic visceropleural membrane. Since the pneumothorax persists because of mechanical conditions, surgical treatment is indicated. The only other form of therapy has been the production of pleurodesis by violent pleural irritant. Brewer and associates consider this method inferior to surgical treatment, because of the limitation in pulmonary function produced thereby. Maximum pulmonary function should be preserved because of the danger of a contralateral pneumothorax or other acute disease. The authors stress the surgical importance of the inclastic, fibroplastic, visceropleural membrane covering the lung in these cases. They describe the technic of decortication of this membrane combined with pneumonolysis of the lung and resection of the ruptured pulmonary bulla which they performed in 15 cases. The ideal procedure for the treatment of spontaneous pneumothorax is the one which will not only bring about obliteration of the pneumothorax pocket but also will return the best function of the lung.

Surgical Treatment of Bilateral Bronchiectasis.—Kergin reviews observations on 58 patients with bilateral bronchiectasis who were treated at two Toronto hospitals. A total of 94 excisional operations were performed on these patients, with 4 deaths. The fatalities all followed performance of the second side of a bilateral resection. By attention to certain technical details it has been possible to complete the last 18 consecutive bilateral resections without a death. Fifteen of the patients showed disproportion in the distribution of the disease, in that on the second side the disease was slight. These have been treated by unilateral resection, with satisfactory result in all but 1 patient. The remaining 43 patients showed disease which was severe or moderately severe on both sides. Bilateral resection in stages within certain limitations is recommended for this group and has been completed in 31 patients. Of the hazards associated with surgical treatment cerebral anoxia seems to be the most important; it is more likely to occur during or immediately after the operation on the second side. Methods which have been used to prevent anoxia include the use of an oximeter during operation to accurately follow fluctuations in the arterial oxygen level. The final result can be assessed in 18 of the 27 patients who have survived bilateral resection. Fifteen have no symptoms and show little evidence of decreased respiratory function. The practice of segmental resection of the basic divisions of the lower lobes, with preservation of the superior segment, has been abandoned because of the high incidence of pleural complications and a tendency to the development of bronchiectasis in the previously healthy superior segment.

Laryngoscope, St. Louis

60:1-130 (Jan.) 1950. Partial Index

*Histiocytic Granuloma of Skull (Triphasic Clinicopathologic Syndrome Previously Termed Letterer-Siwe's Disease, Hand-Schüller-Christian's Disease, and Eosinophilic Granuloma.): Report of 18 Cases. V. Goodhill.—p. 1.
Nasopharyngeal Irradiation and Hearing Acuity: Follow-Up Study of Children. S. R. Guild.—p. 55.
Observations Through Cochlear Fenestra. H. B. Perlman.—p. 77.
Suggestions for Determining Mobility of Stapes by Means of Endoscope for Middle Ear. G. v. Békésy.—p. 97.
Procaine Penicillin Solutions in Treatment of Nasal Polyposis. S. L. Ruskin.—p. 111.

Histiocytic Granuloma of Skull.—Goodhill directs attention to the fact that three diseases heretofore considered separate entities, namely, Letterer-Siwe disease, Hand-Schüller-Christian disease and eosinophilic granuloma, have been shown by many investigators to be probably different phases of the same basic disease process. Dysplasia and hyperplasia of the histiocytic or so-called reticuloendothelial system creates granulomas in certain parts of the body. He suggests that the term histiocytic granuloma be applied to the entity including the three phases. He reports on 18 new cases illustrating the three phases of the disease. The acute stage, the reticulum cell type of Letterer-Siwe, is characterized by occurrence in early infancy, rapid involvement not only of the calvarium but of the other skeletal areas, rapid visceral involvement and early cutaneous manifestations. The mortality is high and the response to treatment by radiation is poor. The subacute, or xanthomatous, stage of Hand-Schüller-Christian is best typified by the clinical triad of proptosis, skull lesions and diabetes insipidus due to involvement of the sella turcica. In this stage the xanthoma, or foam cell, is the outstanding pathologic characteristic. The prognosis is relatively good, the patient's response to irradiation being excellent. The chronic form of the disease characterized by eosinophilia as well as by histiocytosis, and previously termed eosinophilic granuloma, responds equally well to surgery or radiation. It is usually confined to the long bones but may occur in the calvarium.

Medicine, Baltimore

29:1-98 (Feb.) 1950

Medical Aspects of Pyelonephritis. R. Birchall and J. E. Alexander. —p. 1.
Diet and Hypertension: Review. C. B. Chapman and T. B. Gibbons. —p. 29.
Metastatic Brain Abscess. E. M. Gates, J. W. Kernohan and W. McK. Craig.—p. 71.

New England Journal of Medicine, Boston

242:161-196 (Feb. 2) 1950

Adventures Among Viruses: I. Properties of Viruses. C. H. Andrewes. —p. 161.
Observations on Natural Behavior of Cancer in Man. J. E. Dunphy. —p. 167.
Chloromycetin in Treatment of Salmonella Enteritis. S. Ross, F. G. Burke, E. C. Rice and others.—p. 173.
Treatment of Typhoid Fever with Chloromycetin: Report of 4 Cases. G. W. Erickson.—p. 177.
Anticoagulants. D. S. Riggs.—p. 179.
Fibrosarcoma of Thyroid Gland, with Mediastinal Compression and with Metastases to Lungs.—p. 184.
Squamous-Cell Carcinoma (Grade III) of Esophagus, with Lymph-Node Metastases. (Cardiospasm.).—p. 186.

242:197-234 (Feb. 9) 1950

Adventures Among Viruses: II. Epidemic Influenza. C. H. Andrewes. —p. 197.
Thromboembolism: Comparison of Effect of Early Postoperative Ambulation and Dicumarol on Its Incidence. J. C. McCann.—p. 203.
*Dicumarol Prophylaxis of Thromboembolic Disease in Congestive Heart Failure. W. P. Harvey and C. A. Finch.—p. 208.
*Antagonism of Dicumarol by Vitamin K Preparations. R. Miller, W. P. Harvey and C. A. Finch.—p. 211.
A Vernier Caliper for Interpreting Electrocardiograms. H. R. Wainerdi and J. Stewart.—p. 215.
Anticoagulants. D. S. Riggs.—p. 216.
Bonchogenic Cyst.—p. 223.
Subacute and Chronic Glomerulonephritis. Lobar Pneumonia.—p. 227.

Dicumarol® in Heart Failure.—Harvey and Finch studied 180 patients with congestive heart failure. Eighty received dicumarol®, while a control group of 100 did not. The groups were similar in types of heart disease, age distribution and severity of cardiac failure. The authors obtained the impression that the drug can be safely administered to such patients, provided the usual precautions are taken. The mortality in the dicumarol®-treated group was approximately half that of the control group. The difference appeared to be due to the absence of fatal embolic complications in members of the former group.

Dicumarol® and Vitamin K.—Miller and associates investigated the potency of various vitamin K preparations in antagonizing the action of dicumarol®. They found that water-soluble vitamin K preparations had no antagonistic effect. Vitamin K_1 and to a lesser degree vitamin K_3 oxide were effective in decreasing the prothrombin time. On the basis of these and other clinical observations it is suggested that vitamin K_1 and K_3 oxide provide the only known effective means, except blood transfusion, of treating the bleeding caused by dicumarol® intoxication.

Pediatrics, Springfield, Ill.

5:1-170 (Jan.) 1950. **Partial Index**

*Study of Pulmonary Hyaline-Like Material in 4,117 Consecutive Births: Incidence, Pathogenesis and Diagnosis. H. C. Miller and M. H. Jennison.—p. 7.
Benzedrine® and Dexedrine® in Treatment of Children's Behavior Disorders. C. Bradley.—p. 24.
Passive Intraperitoneal Mouse Protection Test in Study of Immune Response to H. Pertussis Vaccination. J. P. McGovern.—p. 38.
Louisiana's Program for Care of Premature Infant. S. S. Chipman and W. L. Treuting.—p. 45.
Observations on Acute Leukemia in Children Treated with 4-Aminopteroylglutamic Acid. S. D. Mills, J. M. Stickney and A. B. Hagedorn.—p. 52.
Electrolyte and Nitrogen Balance Studies in Infants Following Cessation of Vomiting. T. S. Danowski, A. C. Austin, R. C. Gow and others. —p. 57.
Ureterocele in Infancy and Childhood. R. E. Gross and H. W. Clatworthy Jr.—p. 68.
Experimental Basis for Prediction of Therapeutic Efficacy of Streptomycin in Infections Caused by Gram Negative Bacilli. H. E. Alexander, G. Leidy, W. Redman and E. Simakow.—p. 78.
Cranio-Facial Dysostosis of Crouzon: Report of Case in Which Malformation Occurred in Four Generations. J. H. Flippen Jr.—p. 90.
Penicillin Regimens in Pediatric Practice: Study of Blood Levels. G. Hibbs-Smith, T. F. M. Scott and C. M. Whitlock.—p. 97.
Clinical Evaluation of Abnormal Enzyme Content in Pancreatic Juice of Children. C. McDougall.—p. 114.
Glomerular Filtration Rate in Children with Sickle Cell Disease. P. L. Calcagno, J. McLavy and T. Kelley.—p. 127.
Growth Pattern of Prematurely Born Infants. K. Glaser, A. H. Parmelee and E. B. Plattner.—p. 130.

Pulmonary Hyaline-Like Material in Infants.—Miller and Jennison say that in a previous study of consecutive autopsies on stillborn and liveborn infants it was observed that a large number dying in the first four days after birth had hyaline-like membranes in their lungs. This lesion resembled those seen in persons who died as the result of influenza, acute pneumonia of coccic origin and rheumatic pneumonitis. Newborn infants with this type of pulmonary lesion were usually liveborn premature infants in whom there was no other explanation for death. The studies were based on postmortem observations on 79 infants. The material evaluated involved all the stillbirths, live births and neonatal deaths that occurred at the University of Kansas Medical Center during the years 1944 to 1948, inclusive. A study was made of 4,117 consecutive births including 66 stillborn infants and 85 neonatal deaths. Autopsies were performed on 22 stillborn infants and 71 infants dying during the neonatal period. Many liveborn premature infants weighing between 1,000 and 2,000 Gm. at birth had hyaline-like material in their lungs. The incidence of the pulmonary lesion was found to diminish progressively as the birth weight of the infants increased, so that it was practically nonexistent in infants weighing over 3,000 Gm. at birth. The infants dying with hyaline-like material in their lungs had respiratory difficulty, including retraction of the lower chest wall with inspiration. The symptoms were not pathognomonic; a few premature infants with similar symptoms survived. The pathogenesis of this pulmonary lesion remains unknown. The theory is advanced that the hyaline-like material in the lung is the result of an etiologic agent that not only injures the lung of the fetus but causes the premature birth of the infant so injured.

Radiology, Syracuse, N. Y.

54:157-312 (Feb.) 1950

Acute Primary Pulmonary Blastomycosis. C. P. Bonoff.—p. 157.
Hodgkin's Disease of Lung: Roentgen Appearance and Therapeutic Management. A. Sheinmel, B. Roswit and L. R. Lawrence.—p. 165.
Convulsive Fractures of Dorsal Spine Following Electric-Shock Therapy. I. Meschan, J. B. Scruggs Jr. and J. D. Calhoun.—p .180.
Downward Displacement of Gastric Cardia. F. J. Hodges.—p. 194.
*Roentgenographic Estimation of Mineral Content of Bone. G. C. Henny. —p. 202.
Angiocardiography: Its Application to Diagnosis of Coarctation of Aorta. B. S. Epstein.—p. 211.
Cavitary Disease of Lungs (Due to Less Frequent Etiological Factors). J. Stein and A. Sheinmel.—p. 219.
Hamartoma of Lung. E. A. Bragg Jr. and G. Levene.—p. 227.
Calcified Cyst of Adrenal Cortex Without Endocrine Symptoms. M. X. Anderson, H. G. Roberts and E. T. Smith.—p. 236.
Fetal Tolerance to Roentgen Rays: Case Report. A. A. Hobbs Jr. —p. 242.
*Radiotherapy of Acne Vulgaris: Comparative Tests of Treatment Technics. H. Quastler.—p. 247.
Tentative Dose Units for Mixed Radiations. H. M. Parker.—p. 257.
The Tumor Clinic as Study Group. F. G. Stuart.—p. 263.
Medicolegal Implications and Status of Fluoroscopy. I. S. Trostler. —p. 266.

Roentgenographic Estimation of Mineral Content of Bone.—According to Henny adult bone is a living tissue with a mineral content which fluctuates under the influence of endocrine and enzyme activity. The trabeculae of the bone constitute a calcium store which is available for maintenance of the calcium requirements of other tissues when the ingested supply is insufficient. The ratio of calcium to phosphorus remains essentially constant. The mineral content of bone may fluctuate even in health but particularly in certain cases of endocrine imbalance, such as hyperparathyroidism. It is of considerable interest, therefore, to be able to estimate this mineral content: (*a*) the absolute determination of the mineral content makes possible a comparison of the value with corresponding normal values; (*b*) the comparison of successive determinations in the same patient makes it possible to follow the progress of the bone changes. The author describes a method of estimating the mineral content of bone. It depends on a comparison between the absorption of roentgen rays in a bone of the patient and the absorption in a phantom placed over this bone. A roentgenographic film records the transmission of roentgen rays within the shadows, and a densitometer is used to measure the film densities. The author discusses the theory of roentgen absorption and shows that the curves obtained in practice do not deviate much from those indicated by the theory.

Irradiation in Acne Vulgaris.—Technics used in the radiotherapy of acne vulgaris vary considerably. Quastler selected three radiation factors for study: quality of radiation, intervals between treatments and doses. The total treatment time was selected as a basis for evaluating the efficiency of

radiation factors. The decision to terminate a series of irradiations was, whenever possible, made by the dermatologist, who did not know how any given patient was being treated. An arrangement had to be made to test the influence of three radiation factors on the treatment time, each factor being represented at three different levels. This is a situation for which the method of factorial design was developed. The principle of factorial design is to investigate, in one course, the effects of all possible combinations of every level of every factor, and to evaluate all results together in a certain order. Thus a total of $3^3 = 27$ combinations had to be investigated. A total of 60 patients was studied. It was found that the dose of rays can be small: 30 r is as effective as 120 r, and even 20 or 10 r is effective in some cases. About four treatments will produce the desired effect, regardless of dosage, quality or interval of treatment, within the limits tested. At the author's clinic 25 r (about 37 r skin dose) is given three times a week and a total of four treatments is usually required.

Review of Gastroenterology, New York

17:1-80 (Jan.) 1950

Corticodiencephalic Gastrointestinal Syndromes in Epileptics. T. S. P. Fitch, A. W. Pigott and S. M. Weingrow.—p. 11.
Fissure-in-Ano. R. V. Gorsch and U. R. Finnerty.—p. 39.
Observations on Isolated Gastric Pouch in Man. R. A. Jamieson. —p. 49.

17:81-154 (Feb.) 1950

"Sodium Nicotinate Test," Its Clinical and Experimental Applications: Review. M. Stefanini.—p. 93.
Preventive Medicine. H. W. Soper.—p. 105.
Corticodiencephalic Gastrointestinal Syndromes in Epileptics (Part II). T. S. P. Fitch, A. W. Pigott and S. M. Weingrow.—p. 109.
Cyanosis Following Use of Anesthesin (Ethyl-Amino-Benzoate): Case Report. B. M. Bernstein.—p. 123.
Contribution to Study of Gastric Tuberculosis. H. Toole and J. Propatoridis.—p. 125.

Southern Surgeon, Atlanta, Ga.

16:97-228 (Feb.) 1950. Partial Index

Proctologic Examination and Diagnosis. H. B. Asman.—p. 97.
Appendicitis in Louisville General Hospital. J. C. Drye and H. F. Berg.—p. 107.
Carcinoma of Esophagus: Report of 17 Cases. J. E. Hamilton and E. Duncan.—p. 118.
Surgical Relief of Vesical Neck Obstruction in Children. R. Lich Jr. and J. E. Maurer.—p. 127.
Nature of and Treatment of Tendinitis of Musculotendinous Cuff of Shoulder and Subacromial Bursitis. K. A. Fischer and K. D. Leatherman.—p. 132.
Obstruction of Gastrointestinal Tract in Infants. C. H. Maguire. —p. 144.
*Surgical Treatment of Peptic Ulcer Comparing Vagotomy and Gastric Resection: Preliminary Report. B. O. Garner, C. E. Claugus, D. W. Griffin and J. E. Hamilton.—p. 150.
Late Symptoms of Carcinoma of Pancreas. I. Abell Jr.—p. 168.
Incidence of Peptic Ulcer Following Sympathectomy for Hypertension: Presentation of Case. G. Schuster III, A. M. Schoen and R. A. Griswold.—p. 172.
Frontal Lobotomy for Relief of Intractable Pain. E. G. Grantham. —p. 181.
Treatment of Lung Abscess. J. S. Harter.—p. 191.
Acquired Megacolon: Report of Case in Seventy-Four Year Old Male. J. C. Drye and E. L. Pirkey.—p. 196.
Tumors of Rectum. M. H. Pulskamp.—p. 204.
Pathologic Pictures of Anesthetic Complications. R. P. Bergner. —p. 206.

Vagotomy and Gastric Resection.—Garner and his associates review experiences with the surgical treatment of peptic ulcer at the Veterans Administration Hospital, Louisville, Ky. Both subtotal gastric resection and vagotomy were employed. Intractable pain under medical management, repeated perforation, repeated hemorrhage or obstruction were the usual indications for surgical treatment. Since April 1946 82 patients have been operated on for peptic ulcer. Forty-nine patients were subjected to vagotomy and 33 to gastric resection. Although the number and severity of complications have been higher after vagotomy than after gastrectomy, results thus far are somewhat in favor of the former. The apparent advantage of vagotomy over gastrectomy is further enhanced when the following three factors are considered: 1. Although in the cases under consideration the mortality was zero with either of the two operations, reports in the literature indicate a larger number of fatalities after gastrectomy than after vagotomy. 2. The majority of patients who have undergone gastrectomy remain gastric cripples, whereas the only limitation in use of food, tobacco and alcohol imposed on the vagotomized patients has been "everything in moderation." 3. In this comparative study 50 per cent of the patients in the gastrectomy series had gastric ulcer, which is known for its favorable response to any type of surgery.

Surgery, St. Louis

27:1-160 (Jan.) 1950

Collateral Circulation in Presence of Experimental Arteriovenous Fistula: Determination by Direct Measurement of Extremity Blood Flow. R. L. Robertson, E. W. Dennis and D. C. Elkin.—p. 1.
Relationship of Method of Suture to Growth of End-To-End Arterial Anastomoses. J. Johnson and C. K. Kirby.—p. 17.
Refractory Alkalosis and Potassium Ion in Surgical Patients. R. M. Nelson, S. R. Friesen and A. J. Kremen.—p. 26.
Fluorescein: Adjunct in Surgery of Gall Bladder and Biliary Passages. G. J. Menaker and M. L. Parker.—p. 41.
Vagotomy: Observations During Four Years. K. S. Grimson, R. W. Rundles, G. J. Baylin and others.—p. 49.
*Necessity for Tracheotomy in Treatment of Tetanus to Prevent Lethal Respiratory Complications. O. Creech, J. P. Woodhall and A. Ochsner. —p. 62.
Double Lumen Intratracheal Tube for Simultaneous Oxygen Administration and Tracheobronchial Aspiration. R. A. Buyers.—p. 74.
Technique for Extensive Thoracolumbar Sympathectomy Without Rib Resection. T. B. Massell, J. Ettinger and J. R. Vonkamp.—p. 82.
Sebaceous Glands and Sebaceous Gland-Containing Tumors of Parotid Salivary Gland with Consideration of Histogenesis of Papillary Cystadenoma Lymphomatosum. A. J. Rawson and R. C. Horn Jr.—p. 93.
Functional Recovery Following Use of Homogenous Nerve Grafts. L. Davis and D. Ruge.—p. 102.
Facial Pain, Persisting After Retrogasserian Rhizotomy, Relieved by Mesencephalothalamotomy. H. T. Wycis, L. Soloff and E. A. Spiegel. —p. 113.
Progress in Correction of Facial Palsy with Tantalum Wire and Mesh. J. E. Sheehan.—p. 122.
Esophageal Dilatation: Contraindication to Swallowed Thread, and Alternative Method. T. B. Hubbard Jr. and N. L. Leven.—p. 126.
Treatment of Lingual Thyroid with Radioactive Iodine. J. A. Schilling, J. W. Karr and J. B. Hursh.—p. 130.
Use of Heparin in Prophylaxis of Peritoneal Adhesions: Experimental Study. O. J. Van Dyk.—p. 139.
Tuberculosis of Stomach. H. D. Cogswell and L. Censi.—p. 145.
Lymph Fistulas in Trained Dogs: Experimental Technique. J. H. Grindlay, J. C. Cain, J. L. Bollman and F. C. Mann.—p. 152.

Tracheotomy in Treatment of Tetanus.—Creech and his associates believe that many fatal complications of tetanus could be prevented by overcoming respiratory difficulties by early tracheotomy. The procedure not only eliminates all respiratory embarrassment by maintaining an open airway but greatly facilitates the removal of tracheal and bronchial secretions. Profound sedation, which otherwise is so harmful by predisposing to respiratory complications, is not necessary if an open airway is maintained.

Urologic & Cutaneous Review, West Palm Beach, Fla.

84:65-128 (Feb.) 1950. Partial Index

Leiomyosarcoma of Urinary Bladder. R. T. Bergman and A. I. Kugel. —p. 65.
Sarcoma of Prostate—Case Report. T. E. Lowe and M. K. O'Heeron. —p. 67.
Priapism Due to Sickle Cell Anemia: Report of Case. N. F. Kemp and J. J. Hosay.—p. 69.
In Vitro Studies on Trichomonacidal Effect of Certain Drugs and Antibiotics. R. B. Greenblatt.—p. 72.
*Nonspecific Urethritis Successfully Treated with Chloromycetin. C. H. Chen and R. B. Dienst.—p. 77.

Chloramphenicol (Chloromycetin®) in Nonspecific Urethritis.—While using chloramphenicol (chloromycetin®) to treat patients with other conditions, Chen and Dienst noticed that 5 who had nonspecific urethritis of long duration improved or recovered when 3 to 6 Gm. of the antibiotic were given in one to two days. They employed chloramphenicol in a patient with recurrent attacks of nonspecific urethritis. The patient was given 1 Gm. of the drug three times a day. A decrease in the urethral discharge and disappearance of the burning pain was noted on the following day, and on the second day all discharge had disappeared. Because of a history of recurrent attacks, the treatment was continued for three more days until a total of 15 Gm. had been given. The authors hope that this report will stimulate a more extensive trial which may possibly establish chloramphenicol as a useful drug in the management of nonspecific urethritis.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted.
Single case reports and trials of new drugs are usually omitted.

Biochemical Journal, London

48:1-128 (Jan.) 1950. **Partial Index**

Respiration of Rat-Liver Slices in Presence of Some Aliphatic Amines, Hydroxy Amines and Quaternary Ammonium Salts. C. Long. —p. 21.
Turnover of Radioactive Phosphate Injected into Subarachnoid Space of Brain of Rat. O. Lindberg and L. Ernster.—p. 43.
Determination of N-Methyl-2-pyridone-5-carboxylic Acid in Human Urine. W. h M. Holman and D. J. de Lange.—p. 47.
Changes in Water and Ion Metabolism and in Kidney Functions During Development of Oedema in Rats Fed on Protein-Deficient Diets. S. E. Dicker.—p. 53.
Properties of Insulin Core. J. A. V. Butler, D. M. P. Phillips, J. M. L. Stephen and J. M. Creeth.—p. 74.
Bile Pigment Precursors in Normal Human Erythrocytes. C. Gardikas, J. E. Kench and J. F. Wilkinson.—p. 85.
Action of Enzymes on Chlorophenylalanines. H. Blaschko and J. Stiven. —p. 88.
Assimilation of Amino-Acids by Bacteria: 9. Passage of Lysine Across Cell Wall of Streptococcus Faecalis. V. A. Najjar and E. F. Gale. —p. 91.
Properties of Brain Pyrophosphatase. J. J. Gordon.—p. 96.
Are Phospholipins Transmitted Through the Placenta? G. Popják and M.-L. Beeckmans.—p. 99.

British Heart Journal, London

12:1-100 (Jan.) 1950

Coronary Involvement in Dissecting Aneurysm of Aorta. S. Oram and M. C. Holt.—p. 10.
Cardiovascular System in Gargoylism. S. Lindsay.—p. 17.
Pure Aortic Stenosis. G. A. Kilsh.—p. 33.
*Problem of Excessive Radiation During Routine Investigations of Heart. T. H. Hills and R. W. Stanford.—p. 45.
*Khellin in Treatment of Angina of Effort. H. A. Dewar and T. A. Grimson.—p. 54.
Sinus Bradycardia with Cardiac Asystole. R. S. B. Pearson.—p. 61.
Angiocardiography in Cyanotic Congenital Heart Disease. M. Campbell and T. H. Hills.—p. 65.

Excessive Radiation During Investigations of the Heart.—Hills and Stanford point out that in designing apparatus for angiocardiography care must be taken to protect all concerned from both direct and scattered radiation. The authors make recommendations that are based on experiments carried out in the x-ray department at Guy's Hospital. The patient may receive a skin dose sufficient to produce some degree of burn. It is not likely that the total radiation will have harmful effects otherwise, but if a patient has received a dose of 150 r he should not have any further radiation to the same area for at least 14 days, and in any year should not receive such a dose on more than three or four occasions at most. During the making of a chest roentgenogram the patient receives up to 0.22 r; during the screening and barium swallow 7.7 r (during an average screening time of three and a half minutes); the screening during catheterization, which requires about 20 minutes, involves the application of about 110 r; during angiocardiography with a series of 10 films about 15 r are applied. This is a total of about 136 r. For those in close proximity to the patient, for the surgeon, the anesthetist and the radiologist, the danger lies in the repetition of the exposure. The intensity of the scattered radiation is by no means negligible; for the anesthetist in angiocardiography it is far in excess of the permitted dose and may easily become so for the surgeon, especially if his hands move into the direct beam. If the same surgeon makes two or three examinations a week he then receives a dose approaching the maximum. Safety can be promoted in three ways: by increasing the distance from the source of radiation, i.e., making use of the fact that the intensity falls off as the inverse square of the distance; by the use of protective clothing, and by employing lead, lead glass or lead rubber screening.

Khellin in Angina of Effort.—According to Dewar and Grimson khellin, a dimethoxy-methyl-furanochromone, is a powerful dilator of the coronary arteries in dogs and rabbits. It is less intense than amyl nitrite but four times as strong as aminophylline and has the merit of prolonged action, which opinion is supported by other investigators, who had used the drug in about 250 patients with angina of effort with good results. Dewar and Grimson studied the comparative efficacy of khellin and glyceryl trinitrate in preventing angina of effort in 12 patients and the electrocardiographic changes that may accompany it. Both drugs were given in their most active form—the glyceryl trinitrate as a tablet to be chewed and the khellin as a liquid to be swallowed. The authors found that khellin is less potent but longer acting than glyceryl trinitrate. Khellin in effective doses did not cause unpleasant side effects and did relieve angina in 1 patient who was intolerant of both glyceryl trinitrate and theophylline-ethylene-diamine. The authors believe that the drug warrants further study.

British Journal of Industrial Medicine, London

7:1-64 (Jan.) 1950

*Skin Cancer in Engineering Industry from Use of Mineral Oil. C. N. D. Cruickshank and J. R. Squire.—p. 1.
Fate of Siliceous Dusts in Body: 1. Comparison of In Vivo Solubilities of Cement, Carborundum, Quartz, and Moulding Sand. P. F. Holt. —p. 12.
Observations on Working Ability of Bantu Mineworkers with Reference to Acclimatization to Hot Humid Conditions. J. S. Weiner.—p. 17.
Effect of Aluminum on Silicosis-Producing Action of Inhaled Quartz. E. J. King, B. M. Wright, S. C. Ray and C. V. Harrison.—p. 27.
Effects of Granite on Lungs of Rats. E. J. King, S. C. Ray, C. V. Harrison and G. Nagelschmidt.—p. 37.
Graphite Pneumoconiosis. L. Parmeggiani.—p. 42.

Skin Cancer Caused by Oils in Engineering Processes.—Cruickshank and Squire call attention to skin contamination of workmen in bar automatic shops where an automatic machine tool is designed to conduct a series of operations on a long metal bar turning out an object such as a bolt. These machines eject much oil into the shop. The authors examined 138 machine operators in three such factories and observed that the skin became grossly contaminated with cutting oils. As an early result 80 per cent of the workers became afflicted with oil folliculitis. In addition, workers who had been exposed for long periods had multiple hyperkeratotic lesions on their arms, 60 per cent of those exposed for more than 15 years being affected. Scrotal carcinoma was observed in a machine operator. An investigation of the records of the United Birmingham Hospitals revealed that during the last 10 years 34 cases of scrotal cancer occurred. Of these, 6 occurred in machine operators and 6 in other workers exposed to oil in the engineering industry; 13 occurred in workers exposed to tar, pitch and similar products. The authors discuss adequate guarding, protective clothing, suitable cleansing agents and barrier creams.

British Journal of Surgery, Bristol

37:129-256 (Oct.) 1949

Diagnosis and Treatment of Vascular Diseases with Special Consideration of Clinical Plethysmography and Surgical Physiology of Autonomic Nervous System. R. H. Goetz.—p. 146.
Blood-Supply to Sigmoid Colon and Rectum with Reference to Technique of Rectal Resection with Restoration of Continuity. J. C. Goligher. —p. 157.
Primary Carcinoma of Penile Urethra. N. F. Kirkman.—p. 162.
*Postgastrectomy Syndromes. A. Muir.—p. 165.
Modern Trends in Hare-Lip and Cleft Palate Surgery with Review of 500 Cases. M. C. Oldfield.—p. 178.
Concerning Unfavorable Late Results of Certain Operations Performed in Treatment of Cardiospasm. N. R. Barrett and R. H. Franklin. —p. 194.
Reconstruction of Trachea and Cervical Oesophagus: Preliminary Report. C. G. Rob and G. H. Bateman.—p. 202.
Surgical Treatment of Non-Resectable Duodenal Ulcer: Antral Exclusion Operation (Bancroft-Plenk Modification). M. Makkas and G. Marangos. —p. 206.
Problem of Localized Surface Intracranial Haemorrhage Causing Compression of Brain. N. Whalley.—p. 212.
Duplications of Foregut: Superior Accessory Lung (2 Cases); Epiphrenic Oesophageal Diverticulum; Intrapericardial Teratoid Tumour; and Oesophageal Cyst. H. S. Baar and A. L. d'Abreu.—p. 220.
Rhabdomyosarcoma of Skeletal Muscle. P. Childs.—p. 230.

Postgastrectomy Syndrome.—Muir analyzed the symptoms following gastrectomy in 124 patients (102 male and 22 female), who had undergone subtotal gastrectomy for a variety of gastric ailments. Ninety of the patients (73 per cent) were troubled with the dumping syndrome, which is characterized chiefly by upper abdominal distension, lassitude, nausea and

bilious vomiting. Other symptoms were cold sweat, flushing of the head and face, flatulence, palpitations and intestinal borborygmi. The syndrome is experienced a few minutes to 30 minutes after a meal. Its duration varies from twenty minutes to two and a half hours, with an average of approximately one hour. The dumping syndrome persisted for an average of 14 months; sometimes it disappeared in three months. The origin of the dumping syndrome is mechanical and is sometimes based on obstruction of the afferent bowel loop. Failure to gain weight after operation is attributed to inadequate feeding in the majority of patients secondary to the presence of digestive symptoms. Steatorrhea was found in 5 underweight patients and is regarded as one cause of the syndrome. Hypoglycemia was found to be a relatively unimportant cause of postcibal distress.

British Medical Journal, London

1:319-386 (Feb. 11) 1950

Role of the Aged in Modern Society. J. H. Sheldon.—p. 319.
Care of the Chronic Sick—III. T. McKeown and C. R. Lowe.—p. 323.
Simulation of Heart Disease. A. R. Gilchrist.—p. 327.
Pain in Chest Wall Simulating Heart Disease. D. R. Allison.—p. 332.
*Canicola Fever in Bristol: Clinical, Bacteriological, and Epidemiological Notes on 6 Human Cases. A. M. G. Campbell, J. Macrae, W. G. Manderson and others.—p. 336.
Symptoms and Signs of Experimentally Induced Vitamin Deficiencies in Man. S. S. B. Gilder.—p. 341.
Disability Produced by Exposure of Skin to Mustard-Gas Vapour. D. C. Sinclair.—p. 346.
Position of Apex Beat as Clinical Sign. D. H. Isaac and A. H. Levy.—p. 349.
Simplified Method of Blood-Sugar Estimation. D. A. Hall.—p. 351.

Canicola Fever.—Campbell and his associates report 6 cases of canicola fever. The febrile attacks in the first 2 patients, a husband and wife, were thought to be due to influenza, and the true cause was not suspected until iridocyclitis developed during the later stages. The source of infection was a puppy, which was found to be a healthy carrier of Leptospira canicola. Both patients suffered from skin abrasions of the hands, and both had mopped up pools of urine left by dogs. The patients lived in a relatively circumscribed community and 10 of the 13 dogs belonging to the inhabitants had positive serologic reactions to L. canicola. Samples of serum from 43 other adult members of the community were negative for leptospirosis. The source of infection of the third case could not be traced. The fourth patient had apparently contracted the disease while bathing in a stagnant river, presumably fouled with dog urine containing L. canicola. The fifth patient had possibly been infected from her own dog and the sixth almost certainly from his. Attention is drawn to the occurrence of ocular and neurologic manifestations in leptospirosis and to their value in differential diagnosis.

Irish Journal of Medical Science, Dublin

280:49-96 (Feb.) 1950

Institutional Care of Children. A. M. McCabe.—p. 49.
Cancer of Oesophagus. C. K. Byrnes.—p. 59.
Anaesthesia for Carcinoma of Oesophagus. P. O'Toole.—p. 80.
Chronic Nasal Sinusitis in Children. T. G. Wilson.—p. 83.
Acute Volvulus. H. MacCarthy.—p. 88.

Archives des Maladies du Coeur, Paris

43:861-956 (Sept.) 1949. Partial Index

Technic and Interpretation of Esophageal Leads. L. Deglaude and P. Laubry.—p. 863.
Electrocardiographic Study of Parietal Aneurysms of Apex of Heart. P. Soulié, J. Laham and I. Papanicolis.—p. 869.
Unipolar Interpretation of Peripheral Electrocardiogram. B. Fumagalli.—p. 891.
*Value of Weltmann Reaction in Differential Diagnosis of Subacute Infectious Endocarditis from Acute Rheumatic Endocarditis. B. S. Djordjevic and A. Rotovic.—p. 909.

Weltmann Reaction in Diagnosis of Endocarditis.—Djordjevic and Rotovic studied the Weltmann reaction in 80 patients with subacute infectious endocarditis and in 80 patients with acute rheumatic endocarditis. The coagulation time was determined 190 times. There was an increase of the coagulation time to 8 to 10 minutes in the majority of the patients with subacute infectious endocarditis. The coagulation time was shortened, normal or slightly lengthened, but did not exceed 7 minutes in 90 per cent of the patients with acute rheumatic endocarditis, primary or recurrent and with or without cardiac decompensation. The considerable difference in coagulation time in subacute infectious endocarditis and in acute rheumatic endocarditis proved that this reaction is of definite aid in diagnosis in doubtful cases. The coagulation time seemed to have a tendency to return to normal in patients who responded satisfactorily to treatment, while such a tendency was not observed in patients with an unfavorable course. In patients who were considered to be cured the coagulation time was still 7.5 for about one year or more, thus demonstrating that the return to normal values may be very slow even in cases with a favorable prognosis. No parallelism was observed in the behavior of the blood sedimentation rate and the Weltmann reaction. Comparative studies of the blood sedimentation rate and of the Weltmann reaction did not add to the value of the latter in the differential diagnosis of subacute infectious from acute rheumatic endocarditis. The method is valuable in the differential diagnosis of subacute infectious endocarditis from acute rheumatic endocarditis.

Policlinico (Sez. Prat.), Rome

56:1409-1426 (Nov. 21) 1949

Test of Erythrocyte Sedimentation Velocity. F. Astraldi.—p. 1409.
*Spontaneous Pneumoperitoneum. G. de Luca and A. G. Sesti.—p. 1420.

Spontaneous Pneumoperitoneum.—De Luca and Sesti report the case of a 27 year old woman who had acute abdominal pain two months after a spontaneous abortion. The abdomen was distended, and pressure on the gallbladder and duodenal areas produced pain. Roentgenologic examination revealed a pneumoperitoneum with accumulation of air under the diaphragm and displacement of the liver and spleen. Lungs and pleura were normal. An exploratory laparatomy was performed, during which an odorless gas escaped. A careful examination of the organs did not disclose any perforation. Postoperative roentgen examination revealed a normal gastrointestinal tract. The authors believe that the pneumoperitoneum was caused by the entrance of air via the cervix and the fallopian tubes during and after the abortion.

Semaine des Hôpitaux de Paris

25:3883-3924 (Dec. 18) 1949

*Osteo-Articular Manifestations of Acute Leukemias of Children. R. A. Marquézy and J. Bonnette.—p. 3883.
Meningomyelitis Due to Staphylococcus Aureus. R. A. Marquézy, M. Boeswilwald and Besse.—p. 3892.
Hemoglobinuric Bilious Fever Observed in a Child in Paris: Case with Recovery. R. A. Marquézy and J. Bonnette.—p. 3895.

Osteoarticular Manifestations of Leukemias.—Marquézy and Bonnette report 3 boys and 2 girls between the ages of 2 and 5½ years with acute leukemia and osteoarticular manifestations. Isolated or multiple roentgenologic changes were observed in 4 children. Three of the patients had cryptoleukemia and 2 had aleukemic leukemia. The incidence of osteoarticular manifestations, which are observed in about one third of the children with acute leukemia, is higher in children than in adults. These manifestations may assume a pseudorheumatic aspect in the majority of the cases, responding occasionally to salicylic acid medication, but they may likewise resemble arthritis or acute osteomyelitis. There is no close parallelism between the clinical manifestations and the roentgenologic changes which may be demonstrated in children who do not complain of pain. Repeated, systematic roentgenologic examination offers better chances to detect skeletal lesions in the progressive course of the disease. The various roentgenologic aspects, such as transverse bands in the metaphyses with rarefaction of bone, osteolysis and periosteal new bone formation are highly suggestive of a leukosis, but none is pathognomonic. The leukemic infiltration causes osteolysis and detachment of periosteum, but it does not involve the articular surfaces. Arthralgia is due to lesions in the adjacent areas, particularly to periosteal lesions. Pain may be either the result of pressure exerted by the proliferation of the leukemic cells within the rigid skeleton or the result of periosteal lesions.

BOOK NOTICES

The reviews here published have been prepared by competent authorities and do not represent the opinions of any official bodies unless specifically stated.

Handbook of Digestive Diseases. By John L. Kantor, M.D., F.A.C.P., Gastroenterologist, Montefiore Hospital, New York, and Anthony M. Kaslch, M.D., F.A.C.P., Lecturer in Medicine, Columbia University, New York. Second edition. Cloth. $11. Pp. 658, with 149 illustrations. The C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1949.

This is, on the whole, a satisfactory "concise presentation of the fundamental aspects of digestive diseases" approached on a sound physiologic basis. The most valuable chapter of the book is the second, which deals in a complete, practical manner with diagnosis by means of the history and physical examination. Earnest consideration of this chapter is urged on all physicians interested in gastroenterology, especially some of the younger men who are not adequately trained and, therefore, not sufficiently appreciative of the value of a well organized and properly interpreted history and an accurate, conscientious examination of the patient—fundamentals in diagnosis that are becoming entirely too perfunctory.

The chapter on peptic ulcer follows the usual conventional pattern, offering nothing new or stimulating. Of necessity, in a book so condensed, gastric and duodenal ulcers are discussed as a common entity which may well not be the case. The final paragraph on vagotomy will not prove acceptable to many readers. There does not seem to be "general agreement" on any aspect of vagotomy and certainly not on the indications for it as outlined, unless it be for marginal or jejunal ulcer. Vagotomy is not suggested, however, for treatment of jejunal ulcer.

The statement "There is no specific treatment for tuberculosis of the intestines" must be challenged in view of current experiences with streptomycin, to which no reference is made.

The sound comments on the influences of psychotherapy in the management of peptic ulcer, unstable colon and ulcerative colitis which characterized Dr. Kantor's approach to such matters are at wide variance with the chapter on "Psychiatric Aspects of Digestive Diseases," submitted by a collaborator. This and the following chapter, on "Gastro-Intestinal Allergy," are not in keeping with the conservative practical aspects of the book as reflected by the original author. The chapter on "Diseases of the Rectum and Anus" is sketchy and could have been omitted in a book of this kind.

Fourteen pages devoted to "Function of the Liver and Liver Function Tests" are an extravagant use of space in a handbook. It is especially unfortunate that, in the introduction to the tests and especially in the summary of their use and value, emphasis is not given to the purely secondary part they should play in the appraisal and management of liver and biliary tract disorders. The statement that these tests are designed to throw a maximum load on a specific function and reveal impaired capacity long before performance has declined sufficiently to produce clinical signs and symptoms is not justified and, to the inexperienced, can be only confusing and misleading.

The categorical statement that it is now generally recognized that cirrhosis of the liver is a "deficiency disease" is not justified, in view of the deficiency of knowledge pertaining to cirrhosis. The regimen of biliary flush advised in the treatment of gallbladder dyspepsia due to stones, "provided obstruction of the common duct is not complete," is not to be recommended. It is a method fraught with danger and one that will not meet approval in preoperative management.

This book fills a definite need in the field of gastroenterology, and, as an interesting and instructive ready reference book, it should appeal alike to the general practitioner and specialist. The publishers are to be commended for providing a book that is a pleasure to read—the paper, printing, illustrations, format and binding being in good taste and of high quality.

The Analytical Chemistry of Industrial Poisons, Hazards, and Solvents. By Morris B. Jacobs, Ph.D., Adjunct Professor of Chemical Engineering, Polytechnic Institute of Brooklyn. Volume I, Chemical Analysis: A Series of Monographs on Analytical Chemistry and Its Applications. Edited by Beverly L. Clarke and I. M. Kolthoff. Second edition. Cloth. $12. Pp. 788, with 121 illustrations. Interscience Publishers, Inc., 215 4th Ave., New York 3; 2a Southampton Row, London, W.C.1, 1949.

In thinking of industrial poisons and hazards, one customarily associates them with mining, petroleum, paint and varnish, explosives and other chemical industries. However, no industry is entirely free from hazard if proper precautions are not taken. For example, an explosion in a candy manufacturing plant recently claimed the lives of several employees. The hazards in the home also have increased with the greater use of such chemicals as organic solvents, fumigants, insecticides, rodenticides and refrigerants. The physician, particularly the industrial physician, is confronted with new problems and increasing responsibility as the nation's industry grows. The advent of the atomic pile and the already extensive use of radioactive compounds in tracer experiments have posed a new set of problems to the industrial hygienist.

Dr. Jacobs' book will prove useful in the detection and solution of many of the industrial safety problems. It contains sections on sampling, estimation of dust and silica, harmful metals, poisonous compounds of sulfur, phosphorus and nitrogen, oxygen and ozone, poisonous halogens, oxides of carbon, cyanides and nitriles, methods of determining solvent vapors, paraffin and unsaturated hydrocarbons, aromatic and halogenated hydrocarbons, alcohols, glycols, alcohol-ethers, ethers, acids, esters, aldehydes, ketones, phenolic compounds, aniline and other organic compounds.

In the discussion of the individual compounds the author gives some of the physical properties of the substance, its industrial uses, the physiologic response of man and test animals to the material and the methods of detection and determination of the compound. About 200 industrial poisons are considered. The book contains numerous references. The section on radioactivity is meager and is considered beyond the scope of the book. The book will undoubtedly prove to be a valuable adjunct to the library of anyone concerned with industrial safety.

External Morphology of the Primate Brain. By Cornelius J. Connolly, Ph.D., Professor of Physical Anthropology, Catholic University of America, Washington, D. C. Cloth. $10. Pp. 378, with 327 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill., 1950.

A number of studies which were published in the *American Journal of Physical Anthropology* form the basis for this book. They were made into an integrated whole by the addition of further studies. The reader is escorted through a study of the sulci of subhuman primates, from the lemur to the chimpanzee (118 pages) to the sulcal pattern in man. A chapter on encephalometry describing the author's method compares the brain of apes with that of man. The development of the human sulcal pattern is followed by a description of the brain of newborn infants and children. To a detailed study of the brains of white persons and Negroes (80 pages) which had previously appeared in the *American Journal of Physical Anthropology* there is appended a general discussion of brain and race: "Frequency differences in the fissural pattern as well as in other morphological features occur in the brain of different races." The relation of cortical areas to the sulci is the next topic, based on Brodmann's and Economo's well known cytoarchitectural maps. The information that can be obtained from endocranial casts is investigated in numerous specimens. "The maximum degree of fissural representation . . . occurs in both anthropoids

and man in young adults." The homologies between anthropoids and man and the sulci of prehistoric man are the topics of the next two chapters. The book closes with a general discussion of homologies and the origin of sulci. In the general conclusions is found: "Although the fundamental primate fissural patterns is obvious in the human brain, enormous developmental changes take place. . . ." "The sulcal pattern reflects in some measure the underlying cortical organization." One may well agree with both statements. Based on the careful examination of over 500 brains from lemurs to man, Connolly has written an account that can serve as a standard.

The appearance of the book is excellent. The printed matter on the wrapper, an excerpt from the foreword by J. W. Papez, a short statement of the material on the front and the table of contents on the back, is both dignified and sensible. The book should be studied by anybody interested in the form and the evolution of the human brain.

Bronchologie: Technique endoscopique et pathologie trachéo-bronchique. Par André Soulas et Pierre Mounier-Kuhn. Préface du Pr Chevalier Jackson. Avant-propos du Dr Robert Monod. Paper. 4000 francs. Pp. 653, with 328 illustrations. Masson et Cie, 120 Boulevard Saint-Germain, Paris 6e, 1949.

Soulas and Mounier-Kuhn have combined to present 18 chapters replete with well chosen, tersely written and profusely illustrated clinical aspects of bronchoscopy. The figures consist largely of roentgenographic studies, but there are also 64 vividly colored endoscopic views and 16 hand-drawn colored microphotographs. These help one to understand chapter contents.

The authors have drawn from a vast clinical material and, according to the dean of American bronchologists, Chevalier Jackson, who contributes a rather complimentary preface, have enriched the French as well as the bronchoscopic literature. The influence of the American school is, of course, obvious, but it is to the credit of Soulas and Mounier-Kuhn to have so beautifully carried on a tradition characterized by close attention to detail and to have depicted so well that which they observed. Standard practices in technic and treatment are evident. No effort has been made to include a large number of references, but, since this work represents the personal experiences of the authors, such bibliography would seem redundant. The format, the quality of paper and printing, the superior illustrative material and the simplicity of presentation should make this book an excellent addition to the libraries of those interested in this field.

Systems of Social Security: New Zealand. Paper. 40 cents; 2s. Pp. 67. International Labour Office, Washington Branch, 1825 Jefferson Place, N.W., Washington 6, D. C.; Geneva, Switzerland, 1949.

This is the first in a series of publications on national systems of social security. This series will describe and analyze the social security legislation of each country according to a uniform plan drafted by the International Labour Office. Lacking an internationally accepted definition of social security, the International Labour Office has assumed that such measures include legal provision of basic income in case of inability to work (including old age), inability to obtain remunerative work or the death of a breadwinner, assistance for dependent children and comprehensive medical care.

This is not an attempt either to uphold or to criticize the New Zealand plan. No effort is made to determine the efficiency or effectiveness of the program's operations. Rather, it is a comprehensive report of the system as it appears on the books. A brief description of the background, structure of the social security scheme and other social benefits is followed by a detailed explanation of the legal basis, scope of protection, provision of benefits, organization and financing of social security.

The entire social security series is to be presented in the same manner as the New Zealand handbook and, therefore, should provide an excellent source of factual information on the programs of the various countries. It should be emphasized that this is a presentation of social security legislation and is not concerned with evaluating either the merits or evils of the system.

The Examination of Waters and Water Supplies (Thresh, Beale & Suckling). Sixth edition by Edwin Windle Taylor, M.A., M.D., B.Ch., Deputy Director of Water Examination, Metropolitan Water Board, London. Cloth. $12. Pp. 819, with 52 illustrations. The Blakiston Company, Division of Doubleday & Co., Inc., 1012 Walnut St., Philadelphia 5; J. & A. Churchill, Ltd., 104 Gloucester Place, London, W.1, 1949.

Any book on the examination of water will have readers because of the importance of the subject. A book as well written and as inclusive as this one, however, deserves special mention, even though portions of it will have no intrinsic value to the American reader.

Of primary importance to the medical officer will be the discussions of toxicity of various organic and inorganic constituents of water in the chapters dealing with the scope of physical, biologic and chemical examination of water and the chapters on the bacteriologic examinations. The methods of analysis will be of interest to the chemist and the methods of purification to the engineer. All the chapters are readable and well developed.

Unfortunately, the book, being written by the Deputy Director of Water Examination for London, concerns itself with the geology, standards of purity and the accepted methods of analysis of Great Britain. A brief chapter on American practice and standards is included in the book but does not obviate the large portions of the book which deal with the British aspects of the subject and which may be of only cursory interest to Americans. However, there is much of interest in this book for anyone associated with the field of water examination.

Eating Together: A Cookbook for Diabetics and Their Families. By Camille Macaulay. With a Foreword by Solomon Strouse, M.D., Clinical Professor of Medicine, University of Southern California, Los Angeles. Cloth. $3.50. Pp. 419. Farrar, Straus and Company, 53 E. 34th St., New York 16, 1950.

This is an important book for families with diabetic members. It is directed at the principal problem which faces the housewife who must cook for a family including one or more diabetic persons—how they can eat together without anyone's feeling left out, and without the cook's being overworked. The first five chapters of the book relate how it came about—the young mother in whom diabetes developed and who hated it and refused to make anything of food substitution instruction, having only the defiant will to use in place of her prescribed 3 per cent vegetable a "good humor." Then came a diabetic child. Both learned more about their problems, and together they fought to victory. The dietary section of the volume fills 350 pages with detailed, exact and yet simple instructions—how to cook for the family so that both the diabetic and the normal members can eat the same food, provided the diabetic member learns how much of each dish he may have. This is a book that can be recommended without reservation by any doctor to his patient's wife, mother, daughter, to the patient herself or whoever is responsible for the cooking. With the diet problem easier to handle, the entire regimen of the patient should be easier to control.

On the Development of Tumors in Various Tissues in Mice Following Direct Application of a Carcinogenic Hydrocarbon. By Ragna Bonnichsen. Translated from Danish by Anna la Cour. Also issued as Supplementum No. 78 to Acta pathologica et microbiologica Scandinavica. Danske afhandling er af det matematisk-naturvidenskabelige Fakultet ved Kjøbenhavns Universitet antaget til offentlig at forsvares for den filosofiske Doktorgrad, 1948. Paper. Pp. 144, with 14 illustrations. Einar Munksgaard, Nørregade 6, Copenhagen, K, 1948.

The author, often in collaboration with Dr. J. Engelbreth-Holm, reports a series of investigations made to test a hypothesis that the application of carcinogens is followed by malignant changes only in tissues where a predisposition to spontaneous malignant growth exists. A review of earlier investigations makes it apparent that the genetic constitution of the mice used is the most important etiologic factor in tumor production.

In the author's experiments 8,10-dimethyl-1, 2-benzanthracene is the carcinogen used. The dose is 0.02 mg., 0.005 mg. or 0.5 mg., applied only once directly to the thymus, lymph nodes, spleen, bone marrow, lung, mammary tissue, subcutaneous tissue or skin (which are sites where spontaneous tumors occur) and to the non-tumor-producing tissues, kidney and testis.

Animals of the Street strain from 4 to 7 weeks of age were used. Each litter was divided, half for controls and half for experiments. The incidence of spontaneous tumors in the controls was as follows: leukemia 1.42 per cent, mammary carcinoma 23.3 per cent (breeding males 21.0, nonbreeding males 2.3 per cent), pulmonary adenoma 2.4 per cent, ovary (granulosa cell) 0.74 per cent, hepatoma 3.5 per cent and skin and subcutaneous 2.0 per cent.

Injection of 0.02 mg. of carcinogen in the thymus raised the incidence to 13 per cent, and in the lung to 19 per cent. It tended to decrease induction time and localize leukemias in the thymus. Incidence of the other types of tumors was unaffected. Injection of 0.005 mg. gave negative results wherever tested. Injection of 0.5 mg. around a mammary papilla and of 0.02 mg. into mammary tissue of estrogen-treated females showed no increase of incidence of mammary tumors due to carcinogen but an increased incidence and decreased induction time due to the estrogen alone; 0.02 mg. in lactating mammary gland had no effect. When 0.5 mg. was used directly on the thymus the incidence of local tumors was 25 per cent; in lungs more than 50 per cent gave local and 18 per cent thymic tumors (all lymphosarcomatous in type).

Spindle cell sarcoma and squamous cell carcinoma occurred locally in 16 per cent lymph nodes injected, in 9.2 per cent of mammary tissue and 4.8 per cent of testis, also in 16 per cent of subcutaneous tissue injected. These may be classed as "specific" tumors. Hyperplasia of thymus and generalized leukemia were greatly increased, the former more than the latter. Application to the mammary tissue was followed by large numbers of lymphosarcomas mostly in lumbar muscles. Pulmonary tumors were hastened but not increased in number. Granulosa cell ovarian tumors were both hastened and increased in incidence. All this evidence with the exception of one testicular carcinoma supports the hypothesis of existing tissue predisposition to cancer.

Vacuum Equipment and Techniques. Edited by A. Guthrie, Ph.D., and R. K. Wakerling, Ph.D. National Nuclear Energy Series, Manhattan Project Technical Section, Division I-Volume 1. Cloth. $2.50. Pp. 364, with illustrations. McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 18; Aldwych House, Aldwych, London, W.C.2, 1949.

The book is based on the work done in the development of high vacuum equipment for use in the electromagnetic separation of uranium isotopes by the personnel of the University of California Radiation Laboratory. The fundamental theories of vacuum practice are presented first and are followed by a discussion of the practical aspects of vacuum technic. Useful information is given regarding mechanical and diffusion pumps, vacuum gages, leak detection devices and materials employed in vacuum work. The thoroughness with which each subject is treated is well illustrated in the chapter on leak-detection instruments, in which eight methods of leak detection are discussed at length.

The book will be of little interest to the practicing physician, but the research worker who is concerned with the establishment and maintenance of a high vacuum system will find here an abundance of helpful information.

Green's Manual of Pathology. Revised by H. W. C. Vines, M.A., M.D., Professor of Pathology, University of London. Seventeenth edition. Cloth. $8. Pp. 1,200 with 730 illustrations. The Williams & Wilkins Company, Mount Royal & Guilford Aves., Baltimore 2, 1949.

A textbook that has survived almost three quarters of a century and has gone through 17 editions must have contained something of value in each edition, even though it has been subjected to revision by different authors. This edition benefits in regard to continuity because the author has been responsible for the revision of previous editions. It contains some new material and a few new illustrations, including colored plates. There is replacement of some of the former illustrations and moderate revision of text. The book is a manual, as is evident by the lack of references. The most outstanding characteristic of the text is the repeated emphasis on pathology as a dynamic process. This viewpoint is clearly delineated in the first chapter, which is the best chapter in the book and is worthy of careful reading. The book is too large to read with ease and the binding is poor. The book can be recommended for additional reading in pathology.

Adaptation. Edited by John Romano, M.D., Professor of Psychiatry, University of Rochester School of Medicine and Dentistry, Rochester, New York. Cloth. $2. Pp. 113. Cornell University Press, 124 Roberts Place, Ithaca, New York; Oxford University Press, Amen House, Warwick Sq., London, E.C.4, 1949.

This volume presents the contributions of five distinguished scholars, in general biology (Paul Weiss), physiology (Homer W. Smith), psychology (Howard S. Liddell), psychiatry (Lawrence C. Kubie) and anthropology (Clyde Kluckhohn), to the general problem of adaptation. The material was presented as lectures on the occasion of the dedication of the psychiatric unit of the Strong Memorial Hospital of the University of Rochester. Each of the essays deals in a philosophic way with the relations between the living organism and its total environment. The book as a whole puts human behavior in its broad setting as a biologic problem. Its editor writes: "Psychiatry, like social anthropology, is currently engaged in attempting to bridge the gap between the physical and biological sciences on the one hand and the social sciences on the other." The first problem is one of finding methods of study suitable to the material to be studied. It is a thought-provoking volume and should provide useful orientations for prospective investigators in the broad fields of psychiatry and sociology.

Nomenclature of Fungi Pathogenic to Man and Animals: Names Recommended for Use in Great Britain. By The Medical Mycology Committee of The Medical Research Council. Medical Research Council Memorandum No. 23. Paper. 6d. Pp. 12. His Majesty's Stationery Office, York House, Kingsway, London, W.C.2, 1949.

In an attempt to attain uniformity in nomenclature, this pamphlet presents a list of recommended names for 40 of the more common pathogenic fungi, the majority of which are endemic in Great Britain. The list is said to be based on published British records; it represents a reduction in numbers from the 65 species of fungi, recorded under 150 names, which a recent census showed.

The proposed nomenclature appears to conform with that accepted by Conant's "Manual of Clinical Mycology" (1945) published under the auspices of the United States National Research Council and with that utilized by the American Type Culture Collection and by Bergey's "Manual of Determinative Bacteriology" (1948).

The list represents a commendable attempt to encourage uniform nomenclature for the fungi and for the pathologic conditions with which they are associated. It should prove valuable to teachers and students of medical mycology, bacteriologists and medical editors, all of whom are presently confused by the multiplicity of terms assigned to a single causative fungal agent or its infectious process.

Proceedings of the First National Cancer Conference [1949]. American Cancer Society and the National Cancer Institute of the U. S. Public Health Service, Federal Security Agency. Cloth. Pp. 310, with illustrations. American Cancer Society, Inc., 47 Beaver St., New York 4, 1949.

In February 1949 a three day conference was held in Memphis, Tenn., under the auspices of the American Cancer Society and the National Cancer Institute, in which several hundred invited experts in the fields of cancer research, teaching and provision of facilities participated in round tables.

Certain general papers were presented to the conference dealing with general problems of growth, differentiation and mutation. These are reproduced in full in these proceedings. Summaries of the panel discussions take up most of the volume, and the subjects covered include endocrinology, lung, head and neck, bone, lymphoblastomas, nervous system, epidemiology, cancer registration, environmental cancer, cancer services and facilities, professional education and administration of grants-in-aid.

The purpose of the conference was to take a comprehensive view of past accomplishments and to assess them, integrate them, and suggest, in each field, the possible direction in which future work should move in the light of the accumulated knowledge. In this aspect, at least, the conference was a partial success. That it was not a complete success is probably due to the short time available for adequate discussion and the overwhelming number of participants. As judged by the proceedings, however, a pattern has been established and future conferences could well be productive of much valuable information. As it is, the

panel discussions as reported reveal at times concern with minutiae and at other times give one a glimpse of the grand pattern of research.

The most outstanding report in the entire volume is the paper by Bernard Cohen on "Fundamental Scientific Research and Its Applications." This address should be required reading for every scientist, regardless of his field of interest, for every student contemplating a scientific career and particularly for so-called scientific planners both within and without the government. This paper cannot be abstracted but must be read in its entirety. It is the best statement of the philosophy and methods of science and research to be published in many years. To those interested in any phase of cancer work, research, teaching or administration, the reports of this conference will repay reading and in many instances will serve to stimulate and orient thinking in this field.

Camp Counselling: An Illustrated Book of Know-How for the Camp Worker. By A. Viola Mitchell, A.B., M.A., Assistant Professor of Physical Education, The University of Maryland, Baltimore, and Ida B. Crawford, A.B. Cloth. $4.25. Pp. 388, with illustrations by Ida B. Crawford. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, 1950.

Much sane advice about health protection as a means of making camping an enjoyable experience is scattered throughout this volume, but it might have been better to bring the points together under a special heading to direct more concentrated attention to them. The authors do not ignore the importance of sanitary precautions, proper evaluation of each camper's physical abilities and the desirability of supervision to prevent excessive strains, but their more or less casual mention tends to suggest that they are of negligible importance. However, since reference is made to camp physicians and nurses and the book is directed specifically to counselors, prospective counselors and camp directors, lack of extended attention to medical aspects is understandable and may even be considered proper.

Presented in four main parts, including the history and objectives of camping, interpretation of the counselor's duties and responsibilities, detailed consideration of camp activities and campcraft and woodcraft, the volume is filled with practical, usable details that should prove invaluable for camp personnel. These, combined with extensive reading lists after each chapter as well as a bibliography of camping literature in the back of the book, make it a valuable working tool for all interested in this activity. Added evidence of this is found in the list of 16 technics suggested in the preface as a means of obtaining a thorough background in the subject. There also is included a helpful directory of publishers and organizations associated with camping.

Hormones in Clinical Practice. By H. E. Nieburgs, M.D., Research Associate Department of Endocrinology, and Assistant Professor, Department of Oncology, University of Georgia, Augusta. Cloth. $5.50. Pp. 388, with 57 illustrations. Paul B. Hoeber Inc., Medical Book Department of Harper & Brothers, 49 E. 33rd St., New York 16, 1950.

This volume according to the preface is prepared for the "general physician" and "to bring to the busy practitioner precise information on such problems as the conditions for which hormone therapy is necessary or desirable, the choice of preparations, and the dosages in which they should be employed." The author brings to his task a rather extensive experience in laboratory methods applied to endocrine problems, in animal research work, and contact for several years with clinical research work. An extensive section of the book presents laboratory diagnostic procedures in adequate detail to serve as a laboratory manual. Bibliographic references are numerous throughout the volume. A section listing commercial preparations of endocrine materials available in Great Britain and in the United States is somewhat more extensive for the British preparations and displays a certain lack of familiarity with those originating in the United States.

The most important aspect of the book, namely, the organization of information about clinical endocrinology, will fall far short of pleasing the busy physician who is not a specialist in endocrinology. Too frequently fundamental facts are mentioned without any apparent connection with the thought of the author or the general concept which the reader is supposed to obtain. There is no real description of the way to arrive at a sound clinical diagnosis of most of the endocrine disorders discussed. The impression is that this is an incompletely digested and extensive set of notes by a student of endocrinology which have been poorly reduced to the form of an understandable treatise.

Included is some questionable therapeutic advice and some that is demonstrably without basis, such as the recommendation that oral thyroid therapy be divided into three doses daily.

The American Academy of Orthopaedic Surgeons Instructional Course Lectures. Volume V, 1948. Editor: Walter P. Blount, M.D. Associate Editor: Sam W. Banks, M.D. Cloth. $7.50. Pp. 330, with illustrations. Edwards Brothers, Inc., 300 John St., Ann Arbor, Mich., 1948.

This is the fifth volume in a series of instructional course lectures given at the annual meetings of the American Academy of Orthopaedic Surgeons since 1943. The first four volumes were published as individual books without numbers. In 1945 there was no meeting and no book was published.

Numbering the volumes is perhaps a better plan, since the material covered by the lectures could not be indicated by any one title. This fifth volume contains 31 lectures by 32 contributors. The content follows no plan of selection as evidenced by lectures on congenital, paralytic and static deformities; on bone tumors, infections and fractures; on surgical anatomy and muscle physiology and vascular complications of orthopedic problems, in addition to plastic and reconstructive surgery of the extremities.

Obviously its usefulness is not limited to orthopedics, but this volume, like previous issues, has its major contribution. The impressive group of lectures on scoliosis and its treatment, with illustrations by Cobb, Irwin Risser and von Lackaum, make necessary this issue for those interested in the problem, especially since these discussions will command more than casual attention. This section alone is, for the younger group of orthopedic surgeons, most welcome.

For those familiar with the series no single issue can be evaluated by itself. The necessary repetition of material by many of those most qualified plus the opportunity for revising past opinions, imparts a changing concept peculiar to a work of this kind. A higher standard cannot be set. These lectures should be a welcome addition to the library of any surgeon and a necessity for those who wish to keep abreast of the advances in orthopedic surgery.

General Chemistry. By Harry N. Holmes. Fifth edition. Cloth. Price, $4.50. Pp. 766, with 190 illustrations. The Macmillan Company, 60 5th Ave., New York 11, 1949.

This excellent introductory textbook by a famous teacher is brought up to date by the inclusion of material on nuclear chemistry, Brönsted's theory of solutions, the newer synthetic drugs, synthetic rubber, synthetic fibers, plastics and petroleum derivatives. As in earlier editions, there are copious illustrations, short bibliographies, thought-provoking questions at the end of chapters and short historical résumés. Practical and industrial applications are stressed. Naturally, inorganic chemistry receives the most space, but the chapters on organic chemistry cover more topics than do chemistry textbooks designed particularly for nurses. Physical chemical concepts are employed throughout.

A Boy Grows Up. By Harry C. McKown. Second edition. Cloth. Price, $2.40. Pp. 333, with illustrations by Roberta Pafia. McGraw-Hill Book Company, Inc., 330 W. 42d St., New York 18; Aldwych House, Aldwych, London, W.C.2, 1949.

Additional chapters, illustrations and revised bibliography have been added to this edition. The volume is primarily designed as an aid to teen age boys in handling problems of adolescence. Presentation of most of the material is in anecdotal form with an attempt to place situations and experiences in natural settings. Advice, given in an informal manner, and practical suggestions are included to aid the adolescent in deciding intelligently about social, vocational, sexual and other personal problems and activities.

QUERIES AND MINOR NOTES

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

SWIMMING POOLS AND FORMER POLIOMYELITIS PATIENTS

To the Editor:—A patient stated that the local Y.M.C.A. barred former poliomyelitis patients from using the swimming pool. Is this action warranted?

E. Kane, M.D., Fond du Lac, Wis.

ANSWER.—There is no scientific basis for excluding a former poliomyelitis patient from a public swimming pool. The National Conference on Recommended Practices for the Control of Poliomyelitis met in Ann Arbor, Mich., in June 1949, and one of the statements issuing from the conference was that quarantine has not been proved valuable in preventing the spread of the disease. The postpoliomyelitis patient using a public swimming pool constitutes no more of a health hazard than do the other bathers, some of whom may actually be harboring the poliomyelitis virus in their intestinal tracts without being ill. Furthermore, it has never been conclusively shown that swimming in a pool, stream or surf has of itself caused the spread of the disease, beyond the fact that large congregations of persons at a public gathering, whether for swimming or theatre going, provide an increased number of personal contacts, any one of whom may be the carrier. It is unfair to deny the therapeutic benefits and the personal enjoyment that may accrue to any postpoliomyelitis patient who desires to use a public swimming pool.

INFANT FEEDING

To the Editor:—What is the latest prevailing opinion on the question of "demand" versus "schedule" feeding of babies?

H. Hollaender, M.D., New York.

ANSWER.—The "self demand" schedule or, better, the "self-regulating" schedule does not mean feeding the infant whenever he whimpers or cries; it means feeding the baby whenever he is really hungry. A normal infant who is on an appropriate and sufficient formula does not get hungry sooner than two hours after his last feeding.

In a recent survey conducted by Dr. Gustave Weinfeld among fifty pediatricians residing in Chicago and vicinity the following statistics were made available: Thirty-five stated that babies should be fed whenever they are hungry; seven said no; sixteen advocated some specified limit of time between feedings, but twenty-two believed that there should not be a specified limit of time between feedings; eight stated that babies should be awakened to be fed, and thirty-two opposed awakening babies for feedings; sixteen indicated that the self-regulating diet should be discarded when the infant was three months of age, but eighteen said no. This represents a small part of the consensus throughout the country.

It is important to individualize. No two infants are alike. Some compulsive perfectionist mothers are made unhappy and confused with the self-regulating schedule, as they are incapable of assuming the responsibility of determining the time when their babies need to be fed. In these few cases it is better not to insist on a self-regulating schedule. Most mothers welcome the self-regulating (demand) regimen and are happy to continue it for at least three months, by which time most infants have placed themselves on a reasonable schedule. All mothers must be warned against carrying the principle of indulgence much beyond this period.

HIGH PITCHED TINNITUS

To the Editor:—I am 35 years old and in excellent health. One year ago a high-pitched, ringing tinnitus was first noticed. There has been no evident change in auditory acuity, and the tinnitus is mostly masked by regular sounds during the day but is present if consciously listened for. There is no past history of any pathologic condition of the ears or related structures. I would appreciate a discussion of causes and therapy.

M.D., Nebraska.

ANSWER.—A high-pitched, ringing tinnitus of one year's duration, caused by changes in the organ of Corti, should show some diminution in the ability to hear high tones when carefully tested with tuning forks and especially with the audiometer under proper conditions. Such a tinnitus might precede a hearing loss by a considerable period of time, and it may be the first sign of a defect in the basal turn of the cochlea. Eventually, and one year seems an adequate interval, there must be in the case of inner ear involvement a diminution in the ability to hear high tones.

In addition to inner ear changes of unknown cause, there are drugs which may produce tinnitus of the type described. Of these, the salicylates and tobacco rank the highest. Even with these, continuous use will result in a high tone hearing loss in many persons. Less common causes, such as cerebral arteriosclerosis and aneurysms of the cerebral vessels, must be diagnosed by careful neurologic methods.

Anemias are not compatible with the description of apparent good health; neither does there seem to be need to note instances of so-called extrinsic tinnitus, which include sounds perceived by the inner ear and due to intratympanic muscle contracture, to muscle sounds produced by swallowing and to abnormal awareness of normal hemic sounds, synchronous with the pulse, for these do not correspond with the description given. The significance of these sounds, whether aural or extra-aural in origin, depends mainly on the cause. Most instances of tinnitus of the described variety are due to degenerative changes in the organ of Corti, for which there is no cure.

DISCOLORATION OF HAIR

To the Editor:—I understand that sulfur discolors hair after a permanent wave and that resorcinol discolors blond hair, especially in the summer. Is there any preparation that causes no discoloration and is safe and effective against seborrhea of the scalp?

M.D., Colorado.

ANSWER.—There is no reason to suspect discoloration of the hair from the use of sulfur after a permanent wave. Resorcinol, however, should be used with caution on blonde hair. In general, it is best not to use waving solution when there is sufficient seborrheic dermatitis in the scalp to require treatment. If there is a considerable amount of scaling, it is well to use an ointment with properties that are both keratolytic and antiseptic. The application nightly of a mixture containing salicylic acid, 3 per cent, and either sulfur precipitate or ammoniated mercury, 5 per cent, in a water-soluble base is usually effective. If necessary, the concentrations may be increased. The drugs are safe to use except in persons who are hypersensitive to them. When there is little scaling, one may use any of the so-called scalp lotions, the formulas for which are furnished in all standard books on dermatology. Some physicians advise against use of preparations containing mercury, sulfur, resorcinol or any similar substance for several days before or after the use of a waving solution.

HYPNOTISM IN TREATMENT OF STAMMERING

To the Editor:—I would be glad to know about the use of hypnotism in the treatment of stammering.

D'Arcy Prendergast, M.D., Toronto, Canada.

ANSWER.—Hypnosis may be effective in the treatment of functional speech disorders if the stammering or stuttering is due to emotional inhibition. The treatment of stammering depends partly on helping the patient understand the deeper emotional problems which originally initiated the difficulty. Rational therapy involves rebuilding of self confidence. In the first part of the treatment, the patient must be convinced that, because of his experiences, he has come to overemphasize the speech function. When he admits that he has a speech problem, he will be easier to treat by hypnosis. The trance state may now be induced, and atonicity may be produced by suggestion. Suggestions may be made to the effect that the muscles of the face, mouth and throat will become relaxed. He is impressed with the fact that he can place himself in a calm and relaxed state and may respond to these suggestions by talking in a normal manner. Then it is impressed on the patient that his speech shows no evidence of stammering, because he is calm and relaxed. Further hypnotic suggestion can then be made to the effect that he visualizes himself with persons he likes and that in his relaxed state he is able to talk easily to them in his phantasy. The next phantasy is to have him talk with persons whom he admires

but of whom he is in awe, and he will find that he is unafraid. Then he is told to imagine going to parties, addressing small groups and then larger groups, at all times reassuring him that he has a calm and relaxed feeling and is totally unafraid. From then on he can be reassured that he can be more assertive and self confident. If he is deeply hypnotized, an experimental conflict may be induced which recapitulates his important conflicts and fears, and he will learn in a dramatic way how his speech breaks down under certain conditions. Once he has been conditioned under hypnosis, the therapy can be changed into self hypnosis. This autosuggestion reinforces self confidence. On the other hand, it is well to remember that the patient needs to gain a complete understanding of himself, and, therefore, psychoanalytic technic should be used.

The patient must be prepared for an occasional relapse in his speech difficulty. He should be impressed with the fact that he must not regard this as a sign of failure but as an experience which will teach him more about his interpersonal problems. A thorough understanding of these will give him the best opportunity to overcome his neurotic attitudes and to express himself normally in speech.

ACNE

To the Editor:—I have had several requests for information concerning the article "Acne is Conquered" from the February 1950 issue of The Woman. The authors apparently claim nearly a 100 per cent cure in acne. Can you give me any information concerning the preparation used?

Howard L. Waring, M.D., Hartford, Conn.

ANSWER.—The treatment referred to was recommended in "Photosensitization Therapy of Acne Vulgaris," New York State Journal of Medicine (48:14 [July 15] 1948). The patients are advised to apply nightly the ointment which contained crude coal tar, sulfur and sulfathiazole, 5 per cent of each in equal parts of wool fat and Lassar's paste. The black ointment, which stains bed linens, is removed the following morning with soap, water and sulfonated oil. This procedure is to be followed for seven days, by which time the skin should become sensitized. It is then to be exposed to ultraviolet rays or to bright sunlight, overexposure being prevented by the patient's threshold of pain tolerance. The treatment is to be continued for one month, and any recurrences are controlled by occasional applications of the ointment. With this regimen the authors report an astonishing 100 per cent cure in two to sixteen weeks in their last 100 cases, regardless of the severity or type of acne, and in approximately 500 cases they encountered no instances of acneform lesions from the tar or of dermatitis from either the sulfur or the sulfathiazole.

The article in *The Woman* is essentially a reprint of one in *Pageant* (August 1949) titled "Found: A Treatment to Cure Acne 100%." It is a sensational type of article. There have not been any reports in the literature to confirm or deny such results. Experienced dermatologists are skeptical of any treatment for acne for which 100 per cent cures are claimed, and many of them question the advisability of deliberately sensitizing exposed areas of skin to sunlight, particularly in young women, for fear of precipitating serious reactions, such as acute lupus erythematosus.

ANESTHESIA FOR ENDOSCOPIC REMOVAL OF FOREIGN BODIES

To the Editor:—What preparative medication and what anesthetic can be used for removing foreign bodies endoscopically from the air passages and esophagus of children from infancy to 12 years? Should an anesthetic be used or should reliance be placed entirely on adequate preparative medication with morphine, atropine and a barbiturate? What dosage should be used?

M.D., Iowa.

ANSWER.—The choice of anesthesia for the removal of foreign bodies from the tracheobronchial tree or esophagus of children up to 12 years of age depends on many factors. In bronchoscopic clinics where adequate equipment and expert assistants are always available, it has been found safest to work without general or local anesthesia. In older, struggling or apprehensive children, morphine may be used preoperatively according to Young's rule ([age ÷ (age + 12)] × the adult dose) unless there is actual or potential danger of respiratory obstruction during the procedure. Local anesthetics (cocaine, tetracaine hydrochloride) are extremely toxic for children and should rarely be used in the older group—and then only sparingly and only after the administration of a barbiturate. Of the types of general anesthesia, inhalation ether is probably the safest; while some endoscopists prefer tribromoethanol solution, its use in endoscopy is not entirely satisfactory because the reflexes of the respiratory tract are not affected by this agent until levels beyond a safe limit are reached. If a general anesthetic is used for the removal of esophageal foreign bodies, the use of an intratracheal tube to establish an airway is extremely important. Inhalation ether may be used safely for most bronchial foreign bodies; with obstructive findings, however, it is safest to work without anesthesia. Intravenously administered thiopental sodium with curare has been used in the 5 to 12 year age group but involves a considerable risk unless administered by someone who has an exceptional experience with these agents and who also is familiar with bronchoscopic technics.

HEMOGLOBIN DETERMINATIONS

To the Editor:—What are considered the limits of error for an average technician using a Coleman Jr. spectrophotometer to do hemoglobin determinations on both venous and arterial bloods?

M.D., Vermont.

ANSWER. It is not clear from the question whether the limits of error required are those of the standard deviation of mean or the standard deviation of individual samples. The former is probably plus or minus 0.2 Gm. of hemoglobin, while the latter is probably plus or minus 0.5 Gm. for samples of about normal hemoglobin concentrations.

The problem of error involves a large number of factors. Among the most important are the standards used for calibration of the instrument. Commonly the hemoglobin concentration of a sample is determined by oxygen capacity or iron content and then the sample is used for obtaining a standard curve. The hemoglobin values of the standard will vary depending on which of these two methods is used. There are errors inherent in the instrument itself, such as reproducibility of the wavelength setting, line voltage fluctuations and the fact that the normal range of hemoglobin values covers a small portion of the curve. In obtaining blood samples there are errors due to the possibility of stasis and the incorporation of varying amounts of extracellular fluid in the sample. There are errors in pipetting and dilution of the sample. Many of the pipets used for measurement of small volumes of blood have been found to have large errors in calibration. Even the time that the diluted blood stands will affect the results obtained. Because of these many sources of error it is not possible in any particular case to state exactly the limits of error of the method, but under the best conditions the values already given herein are approximately correct.

INJECTION TREATMENT OF HEMORRHOIDS

To the Editor:—What is the present status of the treatment of internal hemorrhoids by the injection method?

Daniel Hoffren, M.D., Elgin, Ill.

ANSWER.—Injection therapy is suitable for patients with uncomplicated internal hemorrhoids. The hemorrhoids must be above the pectinate line, must not prolapse with straining or defecation and must not be thrombotic. Usually the presenting symptom in this type of case is bleeding. Further, the hemorrhoids should be small in size and on a broad base. A large hemorrhoid may simply be converted into a fibrous mass by injection. A hemorrhoid on a narrow base also may be converted into a fibrous mass on a pedicle. It is usually stated that in the aged and the debilitated and in patients with serious systemic disease injection therapy is indicated more than surgical therapy. If the patient's symptoms are so pronounced as to demand treatment of the hemorrhoids, surgical intervention usually is required. If severe hemorrhage is the indication, and the injection criteria are satisfied, it is desirable to control bleeding for such a patient nonsurgically. However, a hemorrhoidectomy properly performed with the patient under local, caudal or spinal analgesia is not a shocking procedure even for the aged or the debilitated.

Hemorrhoids that prolapse are best treated surgically. Satisfactory results may be obtained immediately by injection therapy in such a case, but the patient must be forewarned that such results are often temporary and certainly not as lasting as those produced by surgical treatment.

No one should attempt to treat hemorrhoids until he is thoroughly familiar with both surgical and nonsurgical technics. The choice must be dictated by the requirements of the individual case and not by the idiosyncrasy of the operator. Relatively few patients will consult a proctologist when their condition is in the early, nonsurgical stages. The temptation to offer a patient "cure without operation" can only result in the treatment by injection of patients who should have surgical operation. Again, if the operator is skilled in injection therapy but unprepared to give surgical treatment he is apt to employ injections in surgical cases. It is, therefore, imperative to understand fully the indications and technics required for proper management of hemorrhoids.

IODOCHLOROHYDROXYQUINOLINE (VIOFORM®) IN AMEBIASIS

To the Editor:—What is the present status of iodochlorohydroxyquinoline N. F. (vioform®) in the treatment of amebiasis of the rectosigmoid area by rectal instillations?

M.D., California.

ANSWER.—Iodochlorohydroxyquinoline N. F. (vioform®), given orally in recommended dosage (0.25 to 0.4 Gm. three times daily for 10 days; then, after 10 days, the regimen may be repeated), is believed by current investigators to be the most active of the halogenated hydroxyquinolines. In 1934 Anderson and Reed, reporting on untoward effects of antiamebic drugs, cautioned against use of iodochlorohydroxyquinoline by rectal instillation. Their opinion was based on the observation that a 1 to 500 suspension of this drug was irritating to the mucous membrane of the rectosigmoid area. In 6 patients, reported by these authors, discomfort, increased rectal bleeding and congestion of the rectosigmoid membranes were noted. At that time it was recommended that iodochlorohydroxyquinoline not be applied topically to the ulcerated surface of the bowel in amebiasis. Subsequently, Lewis reviewed the evidence presented by David and his co-workers, indicating that, on the basis of blood levels, iodochlorohydroxyquinoline is the best of the available iodine-containing derivatives. Unfortunately, Lewis misinterpreted the earlier report of Anderson and Reed that a soluble form was used by these authors. Actually, vioform® and not the hydrochloric acid derivative was used in 1934. Despite this misinterpretation of earlier work, Lewis reported on the use of iodochlorohydroxyquinoline rectally, 200 cc. of a 1 per cent suspension, given on alternate nights for five doses. This regimen was followed together with oral administration of the drug, 1 Gm. daily for 10 days. Lewis stated, "This schedule of treatment has been effective in the most resistant cases of amebic dysentery, including those from the India-Burma theater." He has cited a series of 4 cases in the United States in which iodochlorohydroxyquinoline was used rectally.

References:

Anderson, H. H., and Reed, A. C.: Untoward Effects of Antiamebic Drugs, Am. J. Trop. Med. 14:269, 1934.

David, N. A.; Phatak, N. M., and Zaner, F. B.: Iodochlorohydroxyquinoline and Diiodohydroxyquinoline: Animal Toxicity and Absorption in Man, Am. J. Trop. Med. 24:29, 1944.

Lewis, Roger A.: Enteric Infections and Their Sequelae, New England J. Med. 235:571, 1946.

DIAGNOSIS OF INFECTIOUS MONONUCLEOSIS

To the Editor:—A Negro aged 19 was seen by me after he had been ill for five days. He had bilateral bronchopneumonia, confirmed by roentgen observations, temperature of 104 F., and enlarged, acutely tender spleen extending halfway to the umbilicus. His white blood cell count was 23,350, 93 per cent being polymorphonuclear cells and 7 per cent lymphocytes. There was a soft systolic murmur at the apex. Past history was noncontributory. The blood culture made after admission was sterile. He was given 1,000,000 units of penicillin a day for two days. Another blood cell count then showed 25,600 leukocytes with 54 per cent polymorphonuclear cells, 40 per cent lymphocytes and 6 per cent monocytes. Agglutination at this time was negative, and a heterophil antibody test showed a reaction of 1:320. Penicillin therapy was stopped, and the patient gradually recovered. The spleen became smaller during the next few weeks. Ten days after the positive heterophil agglutination the heterophil antibody test was negative. Reactions of the blood to Wassermann and Kahn tests were negative. The blood has returned to normal. What is the explanation for the reversal of the heterophil antibody reaction? What should be considered in the diagnosis besides infectious mononucleosis?

Elder Stockdale, M.D., Marshall, Texas.

ANSWER.—Although the method of performing the heterophil antibody test is not stated, it is assumed that the Paul-Bunnel technic was used. This test is not specific for infectious mononucleosis but may be positive in a variety of conditions and even in apparently normal persons. Davidsohn (*Am. J. Clin. Path., Tech. Supp.* 2:56 [March] 1938) has described a modification of this test in which the nonspecific agglutinins are adsorbed on lyophilized or fresh guinea pig kidney. A positive agglutination in any tube obtained after such adsorption is considered diagnostic for infectious mononucleosis by Davidsohn.

Most workers believe that the diagnosis of infectious mononucleosis should be based on a combination of clinical, laboratory and serologic observations. Clinically, inflammation of the nasopharyngeal lymphoid tissue and swelling of lymph nodes, particularly cervical, postauricular and supraclavicular, are usually seen. Enlargement and tenderness of the spleen and liver are frequently noted. Hepatitis is common, and occasionally the differential diagnosis between infectious hepatitis and infectious mononucleosis is difficult. Fatigue and low grade fever are outstanding symptoms. The disease may have bizarre manifestations including cardiac arrhythmias and neurologic and gastrointestinal disturbances.

The blood picture is frequently diagnostic. Occasionally there is leukocytosis; more often, the total white blood cell count will be in the normal range, or there may be moderate leukopenia. The presence of large lymphocytes with fenestrated or abnormal nuclei and clear cytoplasm is characteristic. These are frequently referred to as monocytes, but there is some doubt as to their monocytic origin. The number of abnormal lymphocytes may be as high as 50 to 75 per cent of the total white cells but is usually in the range of 15 to 30 per cent.

The heterophil antibody titer usually varies during the course of the disease. It may not be positive in the early stages. It is well to repeat the test several times at weekly intervals. Usually, a single positive titer should not be considered diagnostic unless the Davidsohn modification of the test is performed. In the present case it is doubtful whether the positive heterophil test has any significance, particularly in the absence of other signs of the disease and the uncharacteristic white blood cell count.

PRURITIC RASH AND DIABETES

To the Editor:—A Jewish man age 71, who has had diabetes for many years, has been taking 30 to 35 units of insulin, which keeps the sugar in his urine and blood under fair control. He has not been under strict dietary control, but he observes the kosher food laws strictly. For years he has had an erythematous rash which covers almost the entire body except the face and legs. This rash is intensely pruritic; it is not elevated, pasty or waxy but looks like large blotches, which never disappear but oftentimes fade moderately. This dermatitis seems to get more intense and pruritic after the patient receives an injection of insulin. A competent dermatologist prescribed lotions and calcium gluconate intramuscularly. He also has received sedatives and antihistaminics. He does not wear woolens, and I have not been able to ascertain any allergies. Nothing has given any relief. I have tried giving him special types of insulin as well as regular, protamine zinc and globin insulins without relief of his pruritus. I would appreciate an opinion.

Abraham B. Sands, M.D., Burlington, N. J.

ANSWER.—In considering this problem one would like to know: (1) How long has the patient taken insulin? (2) Has insulin been taken continuously from the time of starting treatment, or was there a period during which insulin was not taken, followed later by its resumption? (3) Did the skin rash and itching begin before or after the institution of insulin therapy? From the data available it appears unlikely that the dermatitis and itching represent primarily an allergy to insulin, although it is possible that some sensitivity to the agent may be present and that its injection may heighten symptoms temporarily. It is suggested that the dermatitis and the pruritus be regarded and treated as in a nondiabetic patient. It would be worth while to study the patient under controlled conditions in a hospital. It might be found that with restriction of carbohydrate (120 to 150 Gm. a day) the insulin requirement would fall appreciably. A skin biopsy might be helpful.

In patients who on institution or resumption of insulin therapy prove to be allergic to insulin, desensitization may be begun with small doses of a solution of zinc insulin crystals and a gradual increase in the doses as tolerance is established. Thus one may start with 0.001 unit and, giving insulin four or more times each day, gradually increase through stages of 0.002, 0.004, 0.016 unit and so forth, until doses of customary size may be tolerated. However, in the patient in question, who has been taking insulin presumably each day over years of time, such desensitization would not appear practical or profitable.

ANAL FISTULA

To the Editor:—What are the indications and contraindications for surgical treatment of anal fistula complicating ulcerative colitis?

M.D., New Jersey.

ANSWER.—Surgical treatment of anal fistula during the active phase of ulcerative colitis is rarely, if ever, indicated. Only the opening of abscesses to improve drainage is usually indicated. The fistula may be repaired surgically in patients with ulcerative colitis after the disease has healed if the fistula has not healed with the subsidence of the disease.

SPERMATOGENESIS AND HOT BATHS

To the Editor:—Do hot baths affect spermatogenesis? If so, what can be regarded as the critical temperature?

M.D., Kansas.

ANSWER.—Experimental and clinical observations have shown that if the testicle is placed for a long time within the body cavity, spermatogenesis is impaired as the result of body heat. The comparatively temporary exposure of the testicle to heat from a hot tub bath, even if indulged in repeatedly, is quite different and should not seriously or permanently affect spermatogenesis.

PAIN AND EDEMA AFTER RADICAL MASTECTOMY

To the Editor:—A woman had a radical mastectomy in July 1949. The pathologist reported that tissue from axillas then showed "hyperplasia of glands." Does that suggest spread of tumor, for which an operation was performed within a month of time it was discovered? The report of tumor was grade 1 or 2, and the surgeon says the patient is cured. She did not have postoperative irradiation. Now she has pain in the shoulder when moving the arm backward or upward; there also is pain and swelling in the forearm, the pain occurring only when the arm or hand is turned in flexion and extension. Is this due to malignancy? The swelling in the forearm just occurred recently and persists. A roentgenogram of the chest in October did not show signs of malignant changes. Could this swelling of forearm be due to interference with lymphatic vessels from adhesions and not from malignant growth?

E. Y. Alexander, M.D., Barnsdall, Okla.

ANSWER.—The diagnosis of hyperplasia of glands is not microscopic proof that the malignant lesion of the breast has extended into the axillary lymph nodes. It also is not proof that there has been no extension of the carcinoma into the lymph nodes, because it is possible that in the dissection of the axilla all lymph nodes were not removed and submitted to the pathologist for examination. As to the advisability of postoperative roentgen irradiation, not all surgeons agree that it is of value when they have not been able to demonstrate tumor emboli in the axillary or regional lymph nodes. From the history of the case, one should suspect that the pain and swelling now present probably result from extension of disease into the infraclavicular and supraclavicular lymph nodes, causing pressure on the axillary vein and thus producing edema. Such extension cannot be demonstrated by roentgenograms, but the enlarged nodes should be palpable. It is possible, of course, that interference with lymphatic drainage has resulted from the mastectomy and axillary dissection. This diagnosis can only be established after the existence of recurrent or persistent disease has been excluded.

VITAMINS GIVEN BY VEIN

To the Editor:—I should like an opinion on the effectiveness of giving vitamin B complex intravenously. I heard that a great percentage of this appears in the urine within thirty minutes after it has been injected into the vein.

G. L. Lester, M.D., Chautauqua, N. Y.

ANSWER.—The indications for the administration of any vitamin or vitamin mixture intravenously are relatively few. In severe deficiency states or when absorption from the gastrointestinal tract is known to be defective, it is permissible to administer appropriate vitamin preparations parenterally. Otherwise, oral administration is indicated from the standpoint of both safety and economy.

The water-soluble B vitamins are not stored in the body to a large extent, and administration of amounts in excess of the body's needs usually results in the appearance of the excess in the urine. Not all of the vitamins B are excreted at the same rate, and it is likely that thiamine will appear first in the urine.

MIGRAINE

To the Editor:—Please give information concerning the apparent cause and treatment of migraine during the menstrual period. I have 2 young patients, apparently normal physically, with an apparent endocrine disturbance, refractive error or clinical neurosis. One takes cafergot with some relief, but does have a pain along the lateral aspect of the thigh and small areas of exophoresis, of undetermined cause. Does the literature reveal any cases of peripheral vascular disease due to this drug?

Floyd Webb, M.D., Blytheville, Ark.

ANSWER.—Cafergot is a mixture of ergotamine tartrate and caffeine. Although no reports of peripheral vascular disease following the use of this drug have been published, the presence of ergotamine tartrate suggests the possibility that ergotism should be considered in the case mentioned.

MEASLES AND GAMMA GLOBULIN

To the Editor:—Is the prevention or modification of measles, is gamma globulin dangerous from the possibility of being contaminated with the virus of serum hepatitis? If so, are there any products available commercially that have been irradiated or otherwise made safe?

James K. Welch, M.D., Cuba, Ill.

ANSWER.—There is no evidence that gamma globulin is dangerous from the possibility of being contaminated with the virus of serum hepatitis. It has been stated that gamma globulin contains antibodies which are protective against infectious hepatitis. For that reason it may be of value when used as a prophylactic measure to prevent hepatitis. In the circumstances mentioned there is no indication for resorting to irradiation of the product.

UTRAVIOLET LAMPS IN REFRIGERATORS

To the Editor:—Is it practical to install ultraviolet lights in refrigerators to lessen food contamination or infection?

M.D., Iowa.

ANSWER.—While ultraviolet lamps have been recommended for disinfecting solids such as surgical instruments, drinking glasses, knives and forks, the evidence for the effectiveness of such installations is inconclusive. Disinfecting ultraviolet lamps have also been recommended for use in large meat refrigerators to prevent spoilage at a higher temperature; here again the evidence has been inconclusive. Ultraviolet rays are propagated in straight lines; thus bacteria lurking in shadows and crevices and on the reverse side, where the ultraviolet rays cannot reach, will not be killed by the radiation. It is necessary that a bacterium be reached directly in order to effect a kill.

The Council on Physical Medicine and Rehabilitation of the American Medical Association has not accepted ultraviolet lamps for disinfecting solids, preventing the spoilage of meat or use in refrigerators.

SODIUM PROPIONATE IN BREAD

To the Editor:—Sodium propionate is added to bread to prevent spoilage. Is there any information available as to its effect on digestive ferments or intestinal flora?

E. J. Erickson, M.D., Slingerlands, N. Y.

ANSWER.—Sodium propionate is not added to bread to prevent spoilage but rather to retard spoilage. Propionic acid is present in many foods, including swiss cheese, bread and whiskey. It is formed in many types of fermentations, such as that of sugar, souring of milk and the breakdown of proteins. Propionic acid is a normal constituent of human body fluids and under normal conditions is produced by the breakdown of fatty acids containing odd numbers of carbon atoms. It is metabolized in the human body. There is no evidence that sodium propionate in the small quantity occurring naturally in foods or in the small quantity added to bread to retard spoilage affects the digestive ferments or the intestinal flora.

PARALDEHYDE

To the Editor:—I have used paraldehyde extensively in neuropsychiatric practice without any difficulties. Now, I understand that there are definite contraindications to the use of the drug. Please comment.

M.D., Virginia.

ANSWER.—Paraldehyde is ordinarily a safe drug to give. It must be used cautiously in chronic alcoholics during withdrawal of alcohol, since it is relatively easy to induce paraldehyde addiction with successful cure of alcoholism. The craving for paraldehyde may become as great as that for alcohol and may persist. Apart from this, there are no contraindications to the use of the drug.

LUPUS ERYTHEMATOSUS

To the Editor:—In *The Journal*, February 4, page 382, in answer to a query regarding the use of nitrogen mustard in acute disseminated lupus erythematosus, you state, "As far as is known nitrogen mustard has not been used in the treatment of lupus erythematosus disseminatus." I should like to correct this statement, inasmuch as Osborne and associates in *The Journal* (188:1123 [Dec. 27] 1947) stated that they treated a patient for acute disseminated lupus erythematosus with nitrogen mustard and that the patient improved. A further report on this case has not been made by the authors. I am certain that this form of treatment is not the treatment of choice, but it was tried by these authors at that time.

Lawrence C. Goldberg, M.D., Cincinnati.

PROFUSE PERSPIRATION BEFORE MEALS

To the Editor:—In Queries and Minor Notes in *The Journal* of March 4, page 692, under the heading "Profuse Perspiration Before Meals" the following statement is made: "The fact that sweating begins before the patient eats indicates that this is a conditioned reflex . . ."

May I suggest that the more likely possibility is hypoglycemia. This could be checked by a five hour dextrose tolerance test. The patient could then be successfully treated by a regimen of high protein, vegetable and fat intake, frequent small meals and appropriate medication, with sympathicomimetic drugs to prevent the hypoglycemic state.

William Wolf, M.D., New York.

CANCER OF OVARY

To the Editor:—The answer to Dr. J. P. Doitrich's query in the February 25 issue of *The Journal*, page 680, on the management of ascites secondary to ovarian carcinoma omitted another method of treatment. The Cooney peritoneal button operation has been used for ascites secondary to cirrhosis as well as carcinosis (Goldfischer, M.; Kantrowitz, A.; Kornblum, S., and Glick, A. H.: *New York State J. Med.* 49:1297 [June 1] 1949). I have performed three operations using two buttons, one in each lower quadrant via a McBurney incision. The results were extremely gratifying.

Stanley A. Kornblum, M.D., Monticello, N. Y.

in hay fever...

...Nasal Engorgement Reduced
...Soreness, Congestion Relieved
...Aeration Promoted
...Drainage Encouraged

with

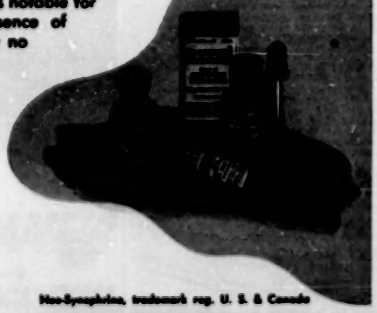
NEO-SYNEPHRINE

When Neo-Synephrine comes in contact with the swollen, irritated mucous membrane of the nose, the patient soon experiences relief.

This powerful vasoconstrictor acts quickly to shrink engorged mucous membranes, restoring easy breathing, and promoting free drainage.

The prolonged effect of Neo-Synephrine makes fewer applications necessary for the relief of nasal congestion — permitting longer periods of comfort and rest.

Neo-Synephrine does not lose its effectiveness on repeated application . . . It may be employed with good results throughout the hay fever season . . . It is notable for relative freedom from sting and absence of compensatory congestion . . . Virtually no systemic side effects are produced.



Supplied as:
¼% and 1% in isotonic saline solution —1 oz. bottles.
¼% in aromatic isotonic solution of three chlorides—1 oz. bottles.
½% water soluble jelly—¾ oz. tubes.

Winthrop-Stearns INC.
New York 13, N. Y. Windsor, Ont.

Neo-Synephrine, trademark reg. U. S. & Canada

ATTEND THE AMERICAN MEDICAL ASSOCIATION 90TH ANNUAL SESSION, SAN FRANCISCO, CALIF., JUNE 26-30. VISIT OUR EXHIBITS D15-20.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 N. Dearborn St. Chicago 10, Ill.
Phone WH 4-1555 Cable Address "Jamatt" Chicago

Agents for Great Britain—W. B. Saunders Company Ltd., 1 Gage Street (New Oxford Street) London WC1, England.

SUBSCRIPTION RATES

Price per annum in advance, including postage: Domestic, $12.00. Canadian, $13.50. Foreign, $16.00.

Domestic rates include United States and possessions, Argentina, Bolivia, Brazil, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Guam, Guatemala, Mexico, Nicaragua, Paraguay, Peru, Republic of Honduras, Salvador, Samoa, Spain, Uruguay.

SINGLE COPIES of this and the previous calendar year, 25 cents; two years old, 40 cents; three years old, 45 cents; in other words, 5 cents additional is charged for each year preceding the last calendar year.

REMITTANCES should be made by check, draft, registered letter, money or express order. *Currency should not be sent unless the letter is registered.* Stamps in amounts under one dollar are acceptable. Make all checks, etc., payable to "AMERICAN MEDICAL ASSOCIATION."

WARNING: Pay no money to an agent unless he presents a letter showing authority for making collection.

CHANGE OF ADDRESS notice should be received at least 15 days prior to date change is to go into effect, and should state whether change is permanent or temporary. Both old and new address should be given.

WHEN COMMUNICATIONS concern more than one subject—manuscript, news items, reprints, change of address, payment of subscription, membership, information wanted, etc.—correspondents will confer a favor and will secure more prompt attention if they will write on a separate sheet for each subject.

CONTRIBUTORS

EXCLUSIVE PUBLICATION: Articles are accepted for publication on condition that they are contributed solely to this journal.

COPYRIGHT: Matter appearing in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION is covered by copyright. Permission will be granted on request for the reproduction in reputable publications of anything in the columns of THE JOURNAL if proper credit is given. However, the reproduction for commercial purposes of articles appearing in THE JOURNAL or in any of the special journals published by the Association will not be permitted.

MANUSCRIPTS: Manuscripts should be typewritten, double-spaced, and the original, not the carbon copy, submitted. Carbon copies, or single-spaced manuscripts will not be considered. Footnotes and bibliographies should conform to the style of the Quarterly Cumulative Index Medicus published by the American Medical Association. This requires in the order given: name of author, title of article, name of periodical, with volume, page, month—day of month if weekly—and year. We cannot promise to return unused manuscript, but try to do so in every instance. *Used manuscript is not returned.* Manuscript should not be rolled.

ILLUSTRATIONS: Half-tones and zinc etchings will be furnished by THE JOURNAL when satisfactory photographs or drawings are supplied by the author. Each illustration, table, etc., should bear the author's name on the back. Photographs should be clear and distinct; drawings should be made in black ink on white paper. Used photographs and drawings are returned, after the article is published, if requested.

ANONYMOUS CONTRIBUTIONS, whether for publication or information, or in the way of criticism, are consigned to the waste basket.

NEWS: Our readers are requested to send in items of news, also *marked* copies of newspapers containing matters of interest to physicians. We shall be glad to know the name of the sender in every instance.

PRICE LIST

A price list describing the various publications of the Association will be sent on request.

AMERICAN MEDICAL ASSOCIATION
535 N. DEARBORN STREET, CHICAGO 10

Digitaline Nativelle maintains the maximum efficiency obtainable. *Positive maintenance*—because absorption is complete and the uniform rate of dissipation provides full digitalis effect between doses. All, with virtual freedom from side reactions.

Not an advertisement unless of physician.

MAINTENANCE: 0.1 or 0.2 mg. daily depending on patients' response. **SHARPE-CHIEF:** 0.1 or 0.2 mg. Digitaline Nativelle replaces 0.1 cc or 0.2 gm. whole leaf.
RAPID DIGITALIZATION: 0.6 mg. initially, followed by 0.2 or 0.4 mg. every 3 hours until patient is digitalized.

Send for booklet "Modern Digitalis Therapy" Varick Pharmacal Co. Inc. (Div. H. Penguin & Co. Inc.), 11 Varick St., New York

Classified Advertisements

Per personal classified advertisement: the rate is $3.50 per insertion for 20 words or less; additional words 20c each. For box number instead of personal address, add 25c and count 4 additional words.

SHOULD YOU PREFER TO HAVE YOUR ADvertisement set in bold face type (illustrated in this paragraph) the rate will be $7.00 for 20 words, additional words 25c each.

Advertisements of manufacturers, dealers, publishers, agencies, etc., and all purely commercial announcements under any caption will be inserted at the rate of $7.50 for 20 words or less; additional words 25c each. No free insertions allowed on commercial announcements. For semi-display, $9.00 for 20 words or less, additional words 30c each. Box number charge same as personal ads.

Journal A.M.A., 535 N. Dearborn St., Chicago 10

NOTICE

Because of the Independence Day Holiday, classified advertising forms for the July 8 issue will close 12 days prior to date of issue instead of the usual 11 days.

BOOKS

BUSY DOCTORS—ORDER ALL THEIR BOOK REquirements from the Chicago Medical Book Company, 1509 Kimpton, Chicago 14, Illinois; immediate delivery; postpaid; free Medical Bulletin.

ASSISTANTS WANTED

WANTED—YOUNG PHYSICIAN; TO ASSIST ME IN my practice; at Chautauqua, New York; during the season, July and August; Chautauqua is a summer recreational and educational colony on Lake Chautauqua; applicant preferably should have 2 or 3 years of hospital training, mostly in internal medicine; a New York state license is essential; salary $200-$300 per month according upon training and ability and whether applicant furnishes own car; room, meals and gate ticket furnished. Box 9745 B. % AMA.

ASSISTANT WANTED—NORTH DAKOTA COUNty (rural); two hospitals; considerable surgery; $7000; opportunity later; photograph. Full details 1st letter. Box 9741 B. % AMA.

WANTED — ASSISTANT; BY DIPLOMATE OF American Board of Obstetrics-Gynecology; prefer associate interested in obstetrics and gynecology; liberal arrangements depending upon qualifications. Write J. Otis Pollock, M.D. 1201 Central Tower, Youngstown, Ohio.

WANTED—ASSISTANT; GENERAL PRACTICE; CENtral Texas; good hospital and schools; recent graduate interested in non-surgical specialty; to associate with experienced surgeon and develop clinic. Box 9503 B. % AMA.

WANTED — ASSISTANT; RICHMOND, VIRGINIA; some general practice; percentage basis and guarantee plus apartment; equipment includes 5-unit roentgenograph; unequalled opportunity for energetic young man; references and photograph. Box 9660 B. % AMA.

WANTED—ASSISTANT AND EVENTUALLY AS ASsociate, either Ear, Nose or Eye; state age, training, and be full detail; will be stipend required. Box 9707 B. % AMA.

WANTED — ASSISTANT; YOUNG QUALIFIED physician; to assist in medical practice; to take position in St. Louis Missouri; excellent opportunity for permanent location; salary open; submit recent photograph. Box 9684 B. % AMA.

RESIDENT IN PATHOLOGY—JULY, 1950 TO JULY, 1951; $100 per month with maintenance; AMA approved, Mt. Sinai Hospital, Cleveland, Ohio. Address: H. S. Kline, M.D.

PHYSICIANS WANTED

THE MARYLAND STATE DEPARTMENT OF HEALTH wishes to fill the position of chief, Bureau of Medical Services; this position requires an M.D. degree, administrative experience, tact and ability to develop and maintain good public relations; applicants for this position must have the following qualifications, education equivalent to that represented by graduation from a class A medical school, post graduate training in an approved school of public health, plus at least 3 years clinical experience, in a hospital approved by the American College of Surgeons; at least 1 year's experience in the administration of a medical care program; possession of a valid license to practice medicine under the Maryland state law or eligibility for license; this position is under Maryland's merit system and offers generous vacation and sick leave; retirement benefits and automatic salary increases; standard salary scale, $7,200 maximum. Present duties: investigation of the Office of the State Employment Commissioner, 31 Light Street, Baltimore 2, Maryland by July 1, 1950.

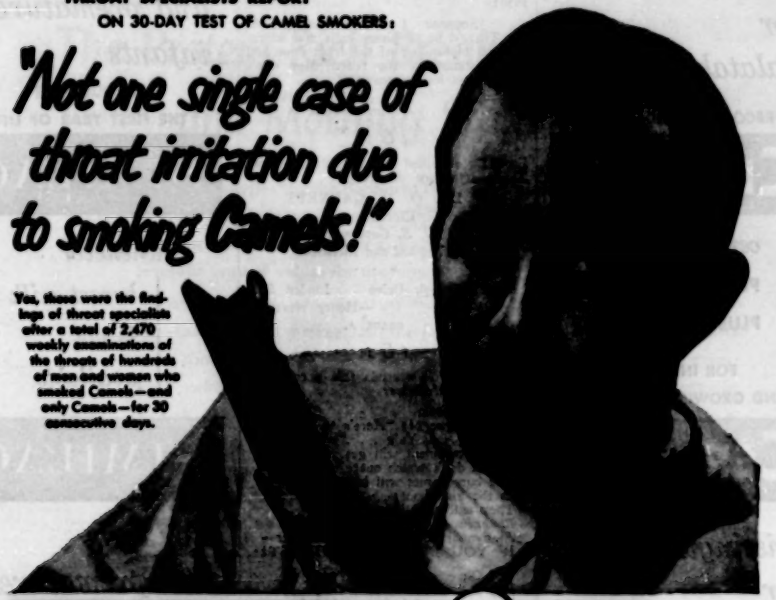
TWO YOUNG PHYSICIANS—ONE TO DO GENERAL practice and assist in industrial practice and 1 to do general practice and some obstetrics and assist in industrial practice; 60 bed hospital and 20 bassinets with training and experience in surgery and medicine under board certified men; excellent salaries and fine opportunity with group in metropolitan Detroit area; if interested a personal interview should be arranged immediately. Box 9735 C. % AMA.

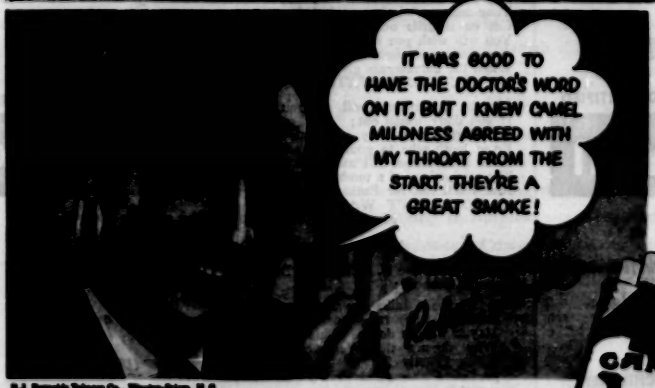
(Continued on page 42)

THROAT SPECIALISTS REPORT
ON 30-DAY TEST OF CAMEL SMOKERS:

"Not one single case of throat irritation due to smoking Camels!"

Yes, these were the findings of throat specialists after a total of 2,470 weekly examinations of the throats of hundreds of men and women who smoked Camels—and only Camels—for 30 consecutive days.





ROBERT LASHER
Personnel Director
One of hundreds of people from coast to coast who made the 30-Day Camel mildness test under the observation of throat specialists.

R.J. Reynolds Tobacco Co., Winston-Salem, N.C.

ACCORDING TO A NATION-WIDE SURVEY:

MORE DOCTORS SMOKE CAMELS

THAN ANY OTHER CIGARETTE

Yes, doctors smoke for pleasure, too! In a nationwide survey, three independent research organizations asked 113,597 doctors what cigarette they smoked. The brand named most was Camel.

Distinguished for palatability,

PRECOOKED AND FORTIFIED

CEREVIM

cereals

PLUS *vitamins*

PLUS *minerals*

FOR INFANTS AND GROWING CHILDREN

CEREVIM

Distinguished for palatability,

PRECOOKED AND FORTIFIED

CEREVIM

cereals

PLUS *vitamins*

PLUS *minerals*

FOR INFANTS AND GROWING CHILDREN

CEREVIM

SIMILAC DIVISION

M & R Dietetic Laboratories

Columbus, Ohio

Tonics and Sedatives

Seen in the *Ladies' Home Journal*, May 1950:

"Suppose I sloughed him off. There'd be telephone calls and letters and blockading of the front door and infestation of the rear. Men don't like no for an answer."

—Robert Sarkine

NO?

t & s

From the classified section of the Houston, Texas, telephone directory:

DR. O. D. GARNETT
Chiropractor
U. S. Government
Trained and Licensed

. . .

2604 Waugh Drive Linden 5646
—Henry Stevens

GRADE A.

t & s

Robert D. Potter sends this poem from *New York Medicine:*

Ode to Utopia
(to the tune of: "Here's to Good Old Yale . . .")

The government will get you,
If you don't watch out;
The bureaucrats will beat you
In the final bout;
They will socialize your pills,
Regiment your patients' ills;
And you'll find your stamp is rubber—
IF YOU DON'T WATCH OUT!

The Government will get you,
If you don't watch out;
Your surgeons' knives can't help you
Cut its tendrils out.
You will wish you had been smart
And done your fighting part
When the bureaucrats give orders—
IF YOU DON'T WATCH OUT!

Oh, the Government will get you
If you don't watch out;
It will give you every symptom
From tooth-ache to gout;
Your frustrations will assume
The proportions of a tomb,
And you'll call for Euthanasia—
IF YOU DON'T WATCH OUT!

Mary P. Wellington

t & s

A suggestion to the U. S. Weather Bureau by Bruno Gebhard:

Everybody talks about the weather including the radio news reports. Maybe we *can* do something about it. Why doesn't the Weather Bureau utilize "Partly Sunny" in a weather prediction or report? Forty per cent sunny is just as true as sixty per cent cloudy, and it sounds better over the air and looks better on a newspaper page. All that it requires is a slight re-orientation that is entirely factual in a cheerful sort of way.

This sort of thinking applies equally to economic, social or political conditions. Things are hardly ever totally bad, so why not play around with the optimistic side of the situation. That's good exercise for attainment and maintenance of better mental health.

(Continued on page 40)

For term and premature infants

THROUGHOUT THE FIRST YEAR OF LIFE

SIMILAC

whenever breast milk is not available

SIMILAC

For term and premature infants

THROUGHOUT THE FIRST YEAR OF LIFE

SIMILAC

whenever breast milk is not available

SIMILAC

SIMILAC DIVISION

M & R Dietetic Laboratories

Columbus, Ohio

The Protein-Rich Breakfast and Morning Stamina

Extensive studies* by the Bureau of Human Nutrition have established that breakfasts rich in protein and supplying 500 to 700 calories, effectively promote a sense of well-being, ward off fatigue, and sustain blood sugar levels at normal values for the entire morning postbreakfast period.

These physiologic advantages are related mainly to the protein content rather than to the caloric content of the breakfast. In fact, when isocaloric breakfasts were compared, those with the higher amounts of protein led to the greatest beneficial effects. Breakfasts providing the lower quantities of protein (7 Gm., 9 Gm., 16 Gm., and 17 Gm. respectively) produced a rapid rise in the blood sugar level and a return to normal during the next three hours. Breakfasts providing more protein (22 Gm. and 25 Gm. respectively) produced a maximal blood sugar rise which was lower than that following the breakfasts of lower protein content, but the return to normal was delayed beyond the three hour period.

The subjects on the higher protein breakfasts "reported a prolonged sense of well-being and satisfaction." The findings indicated that the beneficial effects of the high protein breakfast on the blood sugar level may extend into the afternoon.

Meat, man's preferred protein food, is a particularly desirable means of increasing the protein contribution of breakfast. The many breakfast meats available are not only temptingly delicious and add measurably to the gustatory appeal and variety of the morning meal, but they also provide biologically complete protein, B-complex vitamins, and essential minerals. *Meat for breakfast, a time-honored American custom, is sound nutritional practice.*

---

*Orent-Keiles, E., and Hallman, L. F.: The Breakfast Meal in Relation to Blood-Sugar Values, Circular No. 827, United States Department of Agriculture, Bureau of Human Nutrition and Home Economics, Agricultural Research Administration, Dec., 1949.

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute

Main Office, Chicago...Members Throughout the United States

MANY CHOOSE THE
VISO-CARDIETTE

ON ITS
RECORD

The confidence that the new owner of a Viso-Cardiette *wants* to feel in his equipment comes first from knowledge of Sanborn Company's 25-*year experience* in electrocardiograph design and manufacture. While this background is generally sufficient, further assurance is gained from the Viso-Cardiette record, a record which is not only the "Viso's" three-year reputation as a simplified and fine appearing "direct writer" but also the record that has helped establish that reputation—the "Viso" 'cardiogram.

This is the 'cardiogram on which over six thousand "Viso" users can *depend*, because the "Viso" meets all A. M. A. requirements. And doctors *like* to use "Viso" 'cardiograms because of their adherence to *established standards* of cardiography.

"Viso" records are *inkless*, in standard *rectangular coordinates* and are *permanent*. The paper is standard 6 cm. width with a ruled area 5 cm. wide. It can be handled freely, filed easily.

The coupon below will bring you, without obligation, a new descriptive folder which describes in detail the clinical advantages of the "Viso" record.

SANBORN CO

Please send me without obligation new descriptive Viso-Cardiette Folder

Name.....

Street.....

City & State.....

6-24-50

(Tonics and Sedatives Continued)

Headline in the *Daily Worker*, April 21, 1950:

"BUDENZ STOOLS ON DEMOS AT HEARING"

—Pat Monahan

t & s

From a patient:

Dear Doctor, you will be surprised,
I know to hear from me,
While probably you have surmised,
About my atrophy.

Poetical technique and rhyme,
My hobby now you see,
Although it has now been some time,
Since you have heard from me.

I read and think and write and pray,
Try to employ my mind,
It seems this is the only way,
Of pleasure I can find.

I never do go any where,
Just stay here in my room,
I never have a visitor,
To drive away my gloom.

I still am taking *LIAFON*
And *CEBEFORTIS* too,
Yes, *SIBILIN* I must stay on,
In order to pull through.

And Irish potatoes and *HEMO*
In some hot boiling milk,
Together with some cold *COCO*,
I am a drinking *Ilk*.

But once or twice a week I must,
Take some *MAGNESIA* too,
My poor old head simply will burst,
O, boy! I'm telling you.

If what I eat would pass on through,
My bowels evacuate,
But somehow this they just won't do,
They want to constipate.

This is my problem, condition,
And it is getting worse,
I think we'd have the vict'ry won,
But for this awful curse.

You put your thinking cap on now,
I'm coming to see you,
I want you to now tell me how,
Or what on earth to do.

I may see you Saturday morn,
For blood count, urine test,
So if I do I'll blow my horn,
Remain for a short rest.

—R. W. Taylor

t & s

To a friend after a hemorrhoidectomy:

I know how much you were annoyed
When doctors nipped your hemorrhoid.
'Tis shame that one of wit as fine
Should suffer pain so asinine;
But . . . here I go again, tut, tut!
I'm always bringing in a "but"—
I hope a new and lovely spectrum
Your life will seem through altered rectum
And that . . . but what would it avail
To go more deeply in detail?
Suffice to hope your ills will pass
As lightly as a spurt of gas,
And that your blessings, joys, and smiles
Come, not in capsules, but—in piles.

Harry Brunswick Loeb

Desenex®

OINTMENT
AND POWDER OF
ZINCUNDECATE

Employs the Undecylenic Acid Zinc Undecylenate "TEAM"

in the Treatment and Prophylaxis of Fungous Infections of the Skin, especially—

DERMATOMYCOSIS PEDIS
"ATHLETE'S FOOT"

Effective
Virtually
non-irritating

Cures the average moderate to severe case in two to three weeks.

●

OINTMENT

Undecylenic Acid	5%
Zinc Undecylenate	20%

Tubes of 1 oz. Jars of 1 lb.

POWDER

Undecylenic Acid	2%
Zinc Undecylenate	20%

Sifter packages of 1½ oz.
Containers of 1 lb.

Trial supplies and literature sent on request.

W&T

Pharmaceutical Division
WALLACE & TIERNAN PRODUCTS, INC.
Belleville 9, N. J., U. S. A.

PD-31

Refresh... add zest to the hour

Coca-Cola

"Coke"

Ask for it either way . . . both trade-marks mean the same thing.

COPYRIGHT 1950, THE COCA-COLA COMPANY

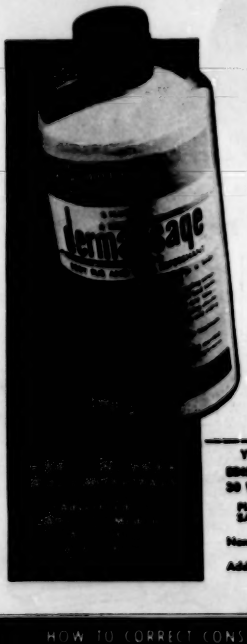
NURSING ARTS,
Mildred L. Montag, M.A., R.N., Margaret Filson, M.A., R.N., Saunders, 1948: p. 237—

"Back care cannot be overemphasized."

p. 377—

"The practice of rubbing the skin, particularly the back, with alcohol to prevent pressure sores is not altogether logical. Alcohol is drying and a dry skin is more susceptible to cracking and irritation than is a somewhat oily skin surface . . . Therefore, some kind of lubricant, such as a lotion, seems to be indicated in the care of the back."

HOW IMPORTANT IS PROTECTION of *the Bed Patient's Skin?*



DERMASSAGE is a soothing, non-drying emollient cream for body massage, after bathing, and in measures for the prevention of bedsores. Lanolin and olive oil form the base for absorption. Contains also menthol U. S. P.; oxyquinoline sulphate, a bacteriostatic having deodorant properties; and carbamide, whose solvent action on proteins aids removal of debris and dead tissue. Your supplier has **DERMASSAGE.**

EDISON'S
dermassage

You are invited to test **DERMASSAGE** firsthand
JAMA 6-24-50
EDISON CHEMICAL COMPANY
30 W. Washington St., Chicago 2

Please send me, without charge, your PROFESSIONAL SAMPLE of Edison's DERMASSAGE.

Name _____

Address _____

HOW TO CORRECT CONSTIPATION IN INFANTS *without* HABIT FORMING LAXATIVES

Borchardt's
MALT SOUP EXTRACT *(Liquid)*
and
DRI-MALT SOUP EXTRACT *(Powder)*

Borchardt's malt soup extract products contain a mixture of sugars similar to those ordinarily used in infant feeding, plus barley-malt extractives; the proportions of maltose, however, are increased to encourage fermentation, thus combating putrefaction and stimulating peristalsis.

- Prompt physiologic action
- No harsh irritant effect
- No danger of habit formation
- No unwanted side-effects
- Palatable, readily mixed with milk

SUPPLIED: MALT SOUP EXTRACT — Jars containing 8 fl. oz. and 1 pt. DRI-MALT SOUP EXTRACT — Jars containing 1 lb.

Borchardt
MALT EXTRACT COMPANY
Malt Products for the Medical Profession Since 1860
217 NORTH WOLCOTT AVENUE
CHICAGO 12, ILL.

(Continued from page 36)

WANTED — QUALIFIED PSYCHIATRIST; NEW York, Nassau; board certified; charge private section hospital; near New York City; practice open to American medical graduate; $6,500-$10,000 start; future financial interest possible. Box 9775 C, % AMA.

WANTED—PSYCHIATRIST; WITH STATE HOSPITAL experience; to act as clinical director at Utah State Hospital; must have certificate of American Board of Psychiatry or be eligible for same; salary up to $7800 per year plus dwelling; also 1 assistant physician; salary $500-$650 per month (depending upon qualifications); must become licensed in state of Utah. Inquire: Superintendent of Utah State Hospital, Provo, Utah. C

COMMUNITY IN NEED OF MEDICAL DOCTOR—in the community of Mt. Jewett, Pa.; half way between Buffalo and Pittsburgh, it is in need of a general practitioner; excellent opportunity for young ambitious doctor; hospital facilities nearby; population 3000, with 10,000 inhabitant surrounding area. For further information contact: Allen Phillips, Secretary, Chamber of Commerce, Mt. Jewett, Pennsylvania. C

WANTED — PHYSICIAN; QUALIFIED SURGERY; fine opportunity; in North Dakota county seat town; new 37 bed hospital planned to open in fall; office space available in hospital. Tupper Howden, Secretary, Grigas County Hospital Association, Cooperstown, North Dakota. C

ASSISTANT PHYSICIANS—STATE HOSPITAL; active program; attractive community life; in scenic restored Williamsburg; good salary and maintenance. Granville L. Jones, M.D., Superintendent, Eastern State Hospital, Williamsburg, Virginia. C

WANTED — RESIDENT PSYCHIATRIST; MENTAL sanitarium; close New York City; experienced electroshock and insulin; under 40; $5000-$7000 start; licensed eligible, NYS; graduate American schools. Box 9770 C, % AMA.

WANTED—ENT MAN; ABOUT 35; WITH BOARDS or eligible; who can do (1) fenestrations; (2) laryngeal surgery; (3) endoscopies; to work in private pay clinic in California. Box 9772 C, % AMA.

WANTED—THREE BOARD CERTIFIED MEN; ABOUT 35; internal medicine; with sub-specialty in (1) allergy; (2) endocrinology; (3) arthritis, respectively; to work in private pay clinic in California. Box 9771 C, % AMA.

ARE YOU INTERESTED IN A POSITION IN ONE OF our county or district health departments? salary $5000-$7200 with $70 a month travel allowance; public health scholarships available with liberal stipends; men and women physicians eligible. Write: Dr. Felix Underwood, M.D., Mississippi State Board of Health, Jackson, Mississippi. C

RESIDENT—TUBERCULOSIS HOSPITAL; $3000- $4000 plus maintenance; excellent training; university affiliation; doctor who "turns on" at bedside; Pennsylvania license eligibility. Write: Rush Hospital, 3301 Lancaster Ave., Philadelphia. Penna., sylvania. C

POSITION AVAILABLE—JULY 1, 1950; FOR A staff physician; in a tuberculosis sanatorium; US citizenship and California license required; physician must be experienced in all phases of pneumothorax therapy and be competent to work independently; salary $600 per month. Apply: Superintendent, Hassler Health Home, Redwood City, California. C

MEDICAL DIRECTOR ADMINISTRATOR WANTED—for regional Red Cross blood center; Great Falls, Montana; starting salary $6000; preference will be given man with special public health training. Apply: Chairman, Medical Advisory Committee, 1900, Great Falls, Montana. C

WANTED—GENERAL PRACTITIONER; TO JOIN clinic; in Ohio; must be well qualified to anesthetize, obstetrics and general medicine; opportunity to specialize later; percentage basis. Box 9769 C, % AMA.

WANTED—YOUNG MALE PHYSICIAN; TO STUDY anesthesia with a group of 3 board anesthesiologists on a preceptor basis. Box 9767 C, % AMA.

WANTED—YOUNG PEDIATRICIAN; BOARD QUALI-fications desired; to associate with 2 certified pediatricians in private practice; in Denver, Colorado; early partnership. Box 9761 C, % AMA.

WANTED — YOUNG PHYSICIAN; TO ASSOCIATE with 2 certified psychiatrists; in private practice with sanitarium and medical school affiliations; in Mid-West; prefer one who has finished residency with possibility of future partnership. Box 9763 C, % AMA.

WANTED—ROENTGENOLOGIST; FOR AN EASTERN group; both diagnosis and therapy; Board qualifications desirable; salary open. Box 9761 C, % AMA.

WANTED—RESIDENT PHYSICIAN; IN PRIVATE neuropsychiatric clinic and hospital; in large southwestern city; psychiatric training considered; rotating essential; salary open; confine references with 1st letter. Box 9762 C, % AMA.

RESIDENT MEDICAL DIRECTOR—PSYCHIATRIST; with state licensee Ohio or eligible; preferred; 100 bed psychiatric hospital + ; approved residency training; organized visiting staff; salary and residence for family; full maintenance self and wife; open September 1st. Box 9754 C, % AMA.

WANTED—OTOLARYNGOLOGIST; CERTIFIED OR eligible; for association with well established group; ideal mid-west location. Box 9755 C, % AMA.

RADIOLOGIST—32; DIPLOMATE; DIAGNOSIS AND therapy; seeks affiliation with hospital, group or partnership; 5 years training in teaching institutions; additional practical and administrative experience; immediate availability. Box 9753 C, % AMA.

WANTED—YOUNG PHYSICIAN; TO BECOME ASSO-ciated with group; 2 clinics in adjoining cities; Minnesota; industrial and private practice; considerable surgery; exceptional opportunity for young man seeking experience in general practice and surgery. Box 9480 C, % AMA.

EENT PHYSICIAN — NC LICENSE OR ELIGIBLE take State Board for reciprocity; opportunity Pinetop Vlly and Rocky Mt., NC; office space available. H. M. Smith, Optician, Dunn, North Carolina. C

(Continued on page 44)

builds husky babies

Ready-to-feed S-M-A® is patterned after human milk. Quantitatively and qualitatively, its content of protein, fats, carbohydrates, essential minerals and vitamins is designed to provide a complete nutritional base for sturdy growth. Many years of clinical experience proves S-M-A is good for all babies.

S-M-A Concentrated Liquid—cans of 14.7 fl. oz.

S-M-A Powder—1 lb. cans

Wyeth

simplify
the
mother's
problem

CEVEX

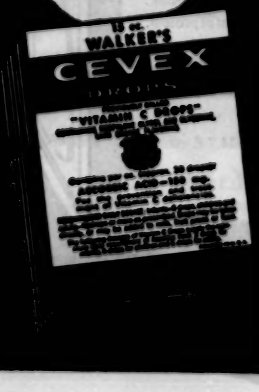
Brand of
ASCORBIC
ACID DROPS

Equivalent of
VITAMIN C DROPS

Makes it easy to administer adequate amounts of vitamin C to infants and young children. Each drop supplies 5 mg. of vitamin C.

CEVEX may be added to milk, fruit juices, or food.

To ensure that your patients receive the vitamin C drop that is Council accepted specify:



(Continued from page 42)

SINGLE RESIDENT PHYSICIAN—PERMANENT; 75 sanatorium; Adirondacks. Write: Dr. Oswald R. Jones, 71 East 71st Street, New York, New York. C

WANTED—ENT SPECIALIST; ABLE TO DO REfractions; also ophthalmologist who can do tonometry; for partnership in established clinic; $12,000 and up 1st Year. Box 9486 C, % AMA.

WANTED — PHYSICIAN; BY JULY; MINIMUM 1 year surgery; to assist 7/4/51 to locate North Carolina; public health unit; early partnership to right man. W. A. Hoover, M.D., Gurney, North Carolina. C

SURGEON—WISHES ASSOCIATE; TO ASSIST IN surgery and do general practice; commission basis; 4 room, modern apartment available; Mid-West. Box 9363 C, % AMA.

WANTED—STAFF PSYCHIATRIST; FOR STATE hospital position; salary open; must be eligible for licensure in Ohio; this and other positions in Columbus area open; to arrange for interview write to Dept. of Public Welfare, 30 East Broad and Fulton Path, in heart of physical development area; hospital will be ready for occupancy in 6 months; 3 years' experience; psychiatric training; approved residency; psychiatric staff meetings; excellent recreational facilities; rural setting; 10 miles from capital city; generous vacation; sick leave; retirement plan; annual increments. Write: Superintendent, Box 104, Cleveland, Ohio. C

OBSTETRICIAN-GYNECOLOGIST—BOARD TRAINing; to associate with 3 man established 6 man group in 25 man clinic; salary to start; full partnership in 2 years; modern hospital facilities and future; Detroit. Box 9729 C, % AMA.

MEDICAL DIRECTOR OF A LARGE MANUFACTURing plant in Middle West is seeking a physician; to take charge of medical department; work will involve general industrial physical examinations, and minor surgery; state age, education, experience and salary desired. Box 9730 C, % AMA.

WANTED—AN ASSISTANT MEDICAL DIRECTOR; by a large insurance company in the Chicago district; unrestricted opportunity for advancement; must be a graduate of a school and have completed a satisfactory internship. Box 9729 C, % AMA.

WANTED—GENERAL PRACTICE MD; TO OPERATE city hospital; city owns hospital and will operate the same; 7000 equipped with nurses' home; present MD leaving June 30th to attend school. F. G. Gross, Secretary, Bowbells, North Dakota. C

WANTED—PHYSICIAN; BETWEEN AGES OF 25 and 32; to associate with 3 doctor firm; excellent office quarters and all modern facilities; to do general practice and general surgery; one of town's finest offices; excellent future for right man. Box 9711 C, % AMA.

WANTED—PEDIATRICIAN; BOARD ELIGIBLE or certified; to join established clinic; salary open; also wanted, G.P. to fill locum; August 1st to October 1st. Address: Dr. [illegible], Stanley, North Dakota. C

WANTED—GENERAL PRACTITIONER; FOR DELAware small town within 15 miles 2 hospitals; living quarters furnished if desired; low rent. Large territory. Communicate with: Mrs. Albert Warren, Felton, Delaware.

WANTED—DOCTOR; INTERESTED IN RETIREMENT or semi-retirement; to buy fine modern 11 unit court on highway 66 at Tucumcari, New Mexico; altitude 4163 feet. Write or see: A. E. Bonar, Agent, Dalhart, Texas. C

MID-WESTERN INDUSTRIAL CITY—OFFERS OPportunity for accepted or eligible; specialist in internal medicine to open; good complete information 1st letter. Box 9725 C, % AMA.

OPPORTUNITY IN CALIFORNIA—PHYSICIANS interested in location; $400 and $500 per month for one available and then with minimum of 2 years practice; excellent opportunities; hospital connections; 2 months' vacation with pay; 1 month's leave of absence; California license or license by reciprocity required; write to Dept. B, 1010 L Street, Sacramento, California. C

WANTED—COMBINATION RADIOLOGIST AND PAthologist; board man not required; to take full charge of large laboratory; Los Angeles, California; top salary. Box 9126 C, % AMA.

DOCTOR—FOR TOWN ON HIGHWAY 1; NEAREST doctors 15 to 18 miles; already over-subscribed; people have signed petitions; has high school and 2 churches. The Hanover Promotion Organization, Manteo, North Carolina. C

OPENING—ON STAFF OF PRIVATE 82 HOSPITAL; with opportunity to establish own practice; general or specialist; pleasant working conditions; excellent facilities; desirable consultation. Mercer Sanitarium, Mercer, Pennsylvania. C

CALIFORNIA OPPORTUNITY — PSYCHIATRISTS and clinical directors; $666 and $749 monthly; board, room or allowance; with opportunity for private practice; unexcelled vacation; sick leave; retirement plan; liberal professional aid; basic; California license or by reciprocity; Los Angeles within 10 years to any other state; write today for application blank to: State Personnel Board, Dept. B, 1010 L Street, Sacramento, California. C

PHYSICIANS WANTED — ANESTHESIOLOGISTS, dermatologists, radiologist, and gastro-enterologist; to be members of a newly formed group; in large Great Lakes city of over 1,000,000; will be on staff of 2 large hospitals with sterling reputations; open training and research; must have ability to head departments. Box 9711 C, % AMA.

THOSE BUFFALO, NY DOCTORS WHO DO NOT want their patients to receive a premium for obstetrics; to read educational sheet and then copy and mail to their patients; [illegible] information; send name, address and number of obstetrical cases handled annually; will pay reasonable fee for your time; Write: P. L. Box 9711, % AMA.

WANTED — GENERAL PRACTITIONER; RESIDENT; to locate in town of 600 population; area, 150 to 200 farms; good hospital available; good school and churches. Write: F. G. Buckner, Chairman, Honor Preservation Committee. C

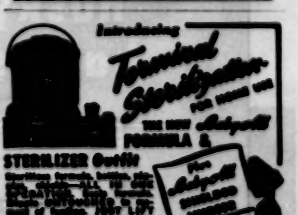
(Continued on page 46)

Handy Hot Packs

Every clinic, every doctor's office has need for this compact, easily portable Ideal Model 812 Electric Hot Pack Heater for small stupes, towels, dressings and smaller Kenny packs and for sterilizing instruments. One quart capacity, stainless steel body. Fiberglas insulation—can be handled freely, placed on finest furniture without damage to finish. Weighs only 10 lbs. 12 oz. Model 812, 3 quart capacity for larger requirements. Write for complete data.

THE SCHMITZBERGER MFG. COMPANY, Toledo, O. Distributed by The Cohen Corporation, Chicago, Ohio, The Cohen Equipment and Supply Co., Los Angeles, and Ben Pennington, Inc., in Canada. Pedlar & Ryan, Ltd., Toronto, Canada. Pedlar & Ryan Metro Co.

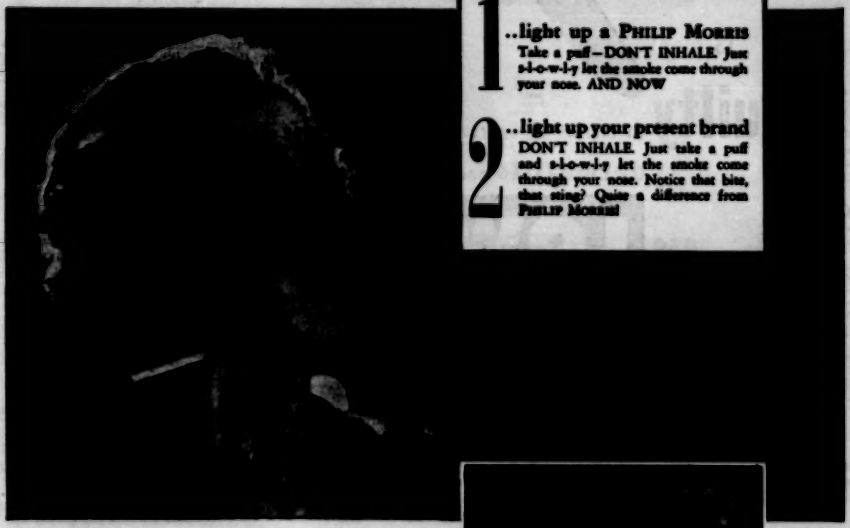
Ideal
PORTABLE
HOT PACK HEATER



Introducing
Terminal Sterilization
THE NEW Adapsoff FORMULA A
For Adapsoff Sterilized Feedings
STERILIZER Outfit
AVAILABLE TO DOCTORS
New Paper on "Terminal Sterilization of Infant Formula in the Home." Send for your copy.
SANIT-ALL PRODUCTS CORP.
GREENWICH, OHIO

SIMPLE TEST PROVES *INSTANTLY* PHILIP MORRIS ARE LESS IRRITATING

*Now you can confirm for yourself, Doctor, the results of the published studies**



HERE IS ALL YOU DO

1 ..light up a PHILIP MORRIS
Take a puff—DON'T INHALE. Just s-l-o-w-l-y let the smoke come through your nose. AND NOW

2 ..light up your present brand
DON'T INHALE. Just take a puff and s-l-o-w-l-y let the smoke come through your nose. Notice that bite, that sting? Quite a difference from PHILIP MORRIS!

With proof so conclusive... with your own *personal experience* added to the published studies*... would it not be good practice to suggest PHILIP MORRIS to your patients who smoke?

PHILIP MORRIS

Philip Morris & Co., Ltd., Inc., 100 Park Avenue, New York 17, N. Y.

*Proc. Soc. Exp. Biol. and Med., 1934, 32, 241-245; N. Y. State Journ. Med., Vol. 35, 6-1-35, No. 11, 590-592; Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154; Laryngoscope, Jan. 1937, Vol. XLVII, No. 1, 58-60

when **soap** is **guilty** of initiating, aggravating, or prolonging **dermatitis** and **dermatoses**

use **LOWILA**

- entirely soapless
- cleanses efficiently
- virtually non-irritating, pH right
- lathers beautifully in hard or soft water
- permits the skin to heal in soap-sensitive patients (housewives, infants, industrial workers, the aged; in pruritus, fungus infections, eczemas) . . . where cleanliness is necessary and soap may harm (acne vulgaris, furunculosis, impetigo, psoriasis).

for complete independence from soap

LOWILA cake for skin cleansing, hands, face, bath

LOWILA liquid for household cleansing, laundry, dishes, etc.

send for sample supply and literature

WESTWOOD PHARMACEUTICALS
Division of Foster-Milburn Co.
468 Dewitt St., Buffalo 13, N.Y.

(Continued from page 44)

WANTED—HOUSE PHYSICIANS; ROTATING SERVICE all departments; housing available for married physicians; majority of staff AB diplomates; all educational facilities of cancer research section, conducted by Oak Ridge Institute of Nuclear Studies, available to all house officers; salary $200 a month. Apply: Director, Oak Ridge Hospital, Oak Ridge, Tennessee. C

WANTED — PSYCHIATRIST; SOUTH CAROLINA State Hospital, Columbia, South Carolina; salary $9432 to $7500; requirements, citizen A medical school, South Carolina license or reciprocity qualifications; retirement plan; paid vacation; sick leave. Cleve C. Odom, MD, Superintendent. C

ASSISTANT HEALTH OFFICER — EASTERN North Carolina; clinical service; salary, $6000; prompt salary increase; car maintenance and travel allowance to additional area; opportunity to study. A medical school eligible. Box 9479 C, % AMA.

ASSISTANT RADIOLOGIST — RECENT DIPLOMATE or one eligible for Boards; 400 bed hospital 7 ½; located in southern metropolis; salary $6500-$10,000 per year; submit resumé of training and professional experience and recent photograph; immediate. Box 9480 C, % AMA.

WANTED—PHYSICIANS; FULL TIME; FOR VACancies in medical staff of large eastern railroad; permanent; class A graduates; under 55; salary $6500 per annum and advancement. Box 9481 C, % AMA.

WANTED—SINGLE WOMAN PHYSICIAN; OR OR about July 1st; to take charge of maternal and infant work for remote patients; to coordinate for the county program; must be in United States citizen and eligible to professional license. Box 9490 C, % AMA.

WANTED—GENERAL PRACTITIONER; AMERICAN; rural community in Maine; 15 miles from Portland; office furnished, 15 bed well-equipped hospital in community. Box 9010 C, % AMA.

BEST LOCATION—IN FASTEST GROWING TOWN on the Florida East Coast; 3 room office, fully equipped; retiring after 34 years practice; excellent opportunity for an internist or pediatrist. Box 9008 C, % AMA.

WANTED—YOUNG WOMAN ASSOCIATE PHYSICIAN; southern college; beginning September, 1950; work largely clinical; good salary; send references and full details of training. Box 9483 C, % AMA.

WANTED—WELL EXPERIENCED GAS; TO DO (LIGHT with gyne); in hospital in Puerto Cortez, Honduras; especially good opening. Box 9049 C, % AMA.

WANTED—YOUNG PHYSICIAN; FOR AN ACTIVE general practice; in large Ohio city; must be graduate July 1, 1950; having to specialize. Box 9062 C, % AMA.

WANTED — STAFF PHYSICIAN; APPOINTMENT starting July 1, 1950; 200 bed approved tuberculosis hospital in affiliated with medical school of Western Reserve University; previous experience in tuberculosis desirable; salary up to $7500 depending on experience; 2 bedroom house available; medical charges for maintenance. Sunny Acres Hospital, Cleveland Ht, Ohio. C

WANTED—PHYSICIAN; TO ASSIST DOCTOR; $450 a month; 5½ day week; no Sunday or holiday work. Box 9053 C, % AMA.

BOARD MAN—DESIRES ASSOCIATE IN EAR, NOSE, throat and endoscopy; must have American Board, or be eligible for Boards; located in Ohio; city of 50,000; 2 hospitals, 300 beds each. Box 9050 C, % AMA.

WANTED—ASSISTANT PHYSICIAN; SALARY RANGE $4200-$4800; residency in psychiatry; salary range $5000-$7200; large eastern state hospital 7 ½ approved; entire training program; training for American Board. Box 9494 C, % AMA.

MEDICAL OFFICERS WANTED—FOR GLENN DALE Sanatorium, of the tuberculosis sanatorium for the District of Columbia; salary range from $5400 to $6400 per annum; sick leave, annual leave and retirement; 1 year experience in tuberculosis required. Address inquiries: Superintendent, Glenn Dale Sanatorium, Glenn Dale, Maryland. C

WANTED—CLINICAL DIRECTOR, DIPLOMATE AND alien, staff psychiatrist; large hospital, leading city of United States dependency; mild tropical climate; substantial salaries including quarters, maintenance, etc. Burneice Larson, Medical Bureau, Palmolive Building, Chicago. C

DERMATOLOGIST — ASSOCIATE WITH 22 MAN group; all certified or eligible; group have shared staff of very large general hospital; city 25,000; Northwest; D-126. Woodward Medical Bureau, 185 North Wabash, Chicago. C

SURGEON — MUST BE CERTIFIED; CALIFORNIA license; and be available for personal interview; due to AMA Meet; Booth H-39. Continental Medical Bureau, Agency, 510 West 6, Los Angeles 14, California. C

WANTED — OPHTHALMOLOGIST; QUALIFIED IN eye surgery; to head department, 20 man clinic; excellent hospital and clinical facilities; college town of 50,000; Northwest; $15,000 and up. 760, Burneice Larson, Medical Bureau, Palmolive Building, Chicago. C

PATHOLOGIST — HEAD BEAUTIFULLY EQUIPPED and well staffed department of fully approved 225 bed hospital; excellent climate; city 75,000; $12,000-$15,000; Southwest; D-454. Woodward Medical Bureau, 185 North Wabash, Chicago. C

PHYSICIAN—FOR CLINICAL INVESTIGATION; under 55; large pharmaceutical firm; East; following up, interesting and evaluating new drugs; $5000-$10,000. New York Medical Exchange, 420 Fifth Avenue, 42nd St., New York, New York. Patricia Edgerly, Director. No registration fee. C

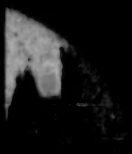
WANTED—MEDICAL DIRECTOR; INTERESTED IN public health and medical education; to direct teaching hospital; faculty appointment; private practice permissible desirable. 701, Burneice Larson, Medical Bureau, Palmolive Building, Chicago. C

PSYCHIATRIST — FOR CLINICAL DIRECTORSHIP; mental hygiene hospital; must be certified or immediately eligible; $7500; excellent 3 room home on grounds; West; D-118. Woodward Medical Bureau, 185 North Wabash, Chicago. C

It's the OFFICIAL A.M.A. Auto Insignia

Assure yourself of every traffic courtesy by displaying this official emblem on the front and back of your car. It shows the Aesculapian staff, the well known green cross and the unmistakable initials "M. D." Each emblem is numbered and registered. PRICE, including clamp bracket for use on license plate, $2.25 each. Order today! (Sold only to A.M.A. members)

American Medical Association, 535 North Dearborn St., Chicago 10, Ill.



PAINTED BY ROBERT PHILIPP

44
OF NEMBUTAL'S CLINICAL USES

sedative

Cardiovascular
Hypertension
Coronary disease
Angina
Decompensation
Peripheral vascular disease

Endocrine Disturbances
Hyperthyroid
Menopause

Nausea and Vomiting
Functional or organic disease (acute gastrointestinal and emotional)
X-ray sickness
Pregnancy
Motion sickness

Gastrointestinal Disorders
Cardiospasm
Pylorospasm
Spasm of biliary tract
Spasm of colon
Peptic ulcer
Colitis
Biliary dyskinesia

Allergic Disorders
Irritability
To combat stimulation of ephedrine alone, etc.

Irritability Associated With Infections

Restlessness and Irritability With Pain

Central Nervous System
Paralysis agitans
Chorea
Hysteria
Delirium tremens
Mania

Anticonvulsant
Traumatic
Tetanus
Strychnine
Eclampsia
Status epilepticus
Anesthesia

hypnotic

Induction of Sleep

obstetrical

Nausea and Vomiting

Eclampsia

Amnesia

surgical

Preoperative Sedation

Basal Anesthesia

Postoperative Sedation

pediatric

Sedation for:
Special examinations
Blood transfusions
Administration of parenteral fluids
Reactions to immunization procedures
Minor surgery

Preoperative Sedation

...TO BRING TO YOUR OFFICE ***all the patients***

WHO REPRESENT EACH OF THE ***many conditions***

FOR WHICH SHORT-ACTING NEMBUTAL IS EFFECTIVE

TWENTY YEARS of clinical application, over 500 published papers, more than 44 effective uses—that is one way to describe short-acting NEMBUTAL. Another: adjusted doses can provide any desired degree of cerebral depression—mild sedation to deep hypnosis.

For example, have you tried short-acting NEMBUTAL for reducing psychic trauma in frightened children and making it easier to manage them in various procedures?

In the absence of serious liver damage, short-acting NEMBUTAL is completely destroyed in the body, hence no tendency toward cumulative effect.

Dosage required is small, only about *one-half* that of many other barbiturates. Small dosage means shorter duration of effect, less possibility of barbiturate "hangover," wider margin of safety and definite economy.

Short-acting NEMBUTAL is available as NEMBUTAL Sodium, NEMBUTAL Calcium and NEMBUTAL Elixir. Oral, rectal or intravenous administration is simplified by a variety of product forms. For a tab-indexed booklet, "44 Clinical Uses for NEMBUTAL," drop a card to Abbott Laboratories, North Chicago, Illinois. Abbott

***In equal oral doses, no other barbiturate combines* QUICKER, BRIEFER, MORE PROFOUND EFFECT *than* . . .**

Nembutal®

(PENTOBARBITAL, ABBOTT)

V 1
195

INTERNIST—CALIFORNIA LICENTIATE; JOIN EStablished group of diplomates; northern California. See us AMA Meet; Booth H-28. Continental Medical Bureau, Agency, 510 West 6, Los Angeles 14, California. C

WANTED—ASSISTANT; BY PATHOLOGIST, DIPLOmate, head of department, fairly large hospital and on faculty medical school; training in Papanicolaou technic desirable; California, 702. Burneice Larson, Medical Bureau, Palmolive Building, Chicago. C

OTOLARYNGOLOGIST — CERTIFIED OR ELIGIBLE; capable of doing office ophthalmology; associate with certified otolaryngologist, also FACS, chief of department, large voluntary hospital and consultant one other; eastern city 40,000; D-354, Woodward Medical Bureau, 185 North Wabash, Chicago. C

CALIFORNIA MEDICAL BUREAU AGENCIES; for physicians and other medical and scientific personnel; write for application blank; registration fee. 24 S. Los Robles Ave., Pasadena 1, California. C

WANTED — ASSOCIATE; BY GENERAL PRACTItioner; considerable surgery advantageous if trained in obstetrics or medicine; $7,200-$10,000 1st year, full partnership later; income of 40,000; Middle West, 702, Burneice Larson, Medical Bureau, Palmolive Building, Chicago. C

BOARD QUALIFIED RADIOLOGIST — DIAGNOSTIC, deep therapy; full time work; 100 bed general voluntary hospital; General Electric equipment; all facilities; attractive Illinois community; percentage; D-362, Woodward Medical Bureau, 185 North Wabash, Chicago. C

OPHTHALMOLOGIST — CALIFORNIA LICENTIATE; preferably completing formal training; associate established man; best hospital connections. See us AMA Meet; Booth H-28. Continental Medical Survey Agency, 510 West 6, Los Angeles 14, California. C

WANTED — OBSTETRICIAN-GYNECOLOGIST; LIcensed in California; to take over practice of obstetrician gynecologist for 9 months; commencing September 15th; possibility permanent association. 704, Burneice Larson, Medical Bureau, Palmolive Building, Chicago. C

EXCELLENT NEW ENGLAND SIX MAN GROUP—requires roentgenologist trained in diagnostic therapy; very desirable; country club town, 3 potential salary initially; D-153, Woodward Medical Bureau, 185 North Wabash, Chicago. C

DIRECTOR DEVELOPMENT RESEARCH—MD, Ph.D. pathology or biochemistry; under 40; large pharmaceutical firm, East; salary open. New York Medical Exchange, 630 Fifth Avenue, 42nd St., New York. New York. Patricia Edgerly, Director. No registration fee. C

WANTED—ANESTHESIOLOGIST; TO BECOME ASsociated with American Board anesthesiologist; head of department, 600 bed teaching hospital; university medical center; minimum $10,000. 705, Burneice Larson, Medical Bureau, Palmolive Building, Chicago. C

OPHTHALMOLOGIST—WILLING TO LEARN MINImum amount office ear, nose, throat; associate with certified ophthalmologist; private practice; city 15,000; to $750 initially; West; D-241, Woodward Medical Bureau, 185 North Wabash, Chicago. C

ADMINISTRATOR — ASSISTANT; CALIFORNIA LIcentiate and experienced tuberculosis. See us AMA Meet; Booth H-28. Continental Medical Bureau, Agency, 510 West 6, Los Angeles 14, California. C

GROUP CLINIC — NEEDS PEDIATRICIAN, OPHthalmologist-otolaryngologist or otolaryngologist; diplomate or eligibility required; staff of 16 specialists; town of 70,000; busy medical center, several large cities; Mid-West. 706, Burneice Larson, Medical Bureau, Palmolive Building, Chicago. C

PEDIATRICIAN—PREFERABLY CERTIFIED; ASSOciate in private practice with 3 certified pediatricians; one, semi-physician; large children's hospital; other, faculty member, university medical school; city $40,000; West; D-370, Woodward Medical Bureau, 185 North Wabash, Chicago. C

WANTED—YOUNG PHYSICIANS; FOR INDUSTRY; hospitals, radiology, pathology, student health etc. Brown's Medical Bureau, 7 East 42nd Street, New York, New York. C

WANTED — ASSISTANT OR GENERAL PRACTItioner interested in surgical assisting or one qualified in medicine, desirous of limiting practice to medicine; active city practice; generous. 707, Burneice Larson, Medical Bureau, Palmolive Building, Chicago. C

SURGEON — TO ASSOCIATE WITH WELL ESTABlished 11 man group; affiliated with fully approved hospital; very desirable California Coast city 100,000; $17,000; D-347, Woodward Medical Bureau, 185 North Wabash, Chicago. C

OTOLARYNGOLOGIST — CALIFORNIA LICENTIATE; join group, southern California; $12,000. See us AMA Meet; Booth H-28. Continental Medical Bureau, Agency, 510 West 6, Los Angeles 14, California. C

WANTED — PEDIATRICIAN, DIPLOMATE OR ELIgible; one associate; 15 to 20 man clinic; large city, university medical center; Mid-West. 708, Burneice Larson, Medical Bureau, Palmolive Building, Chicago. C

PHYSICIAN — TO DO SURGERY AND GENERAL practice; associate with qualified doctors with brand new 45 bed hospital; excellent Michigan community; substantial salary; D-513, Woodward Medical Bureau, 185 North Wabash, Chicago. C

PSYCHIATRIST-NEUROLOGIST—CERTIFIED BY American Board; young; New England; $7500, maintenance. New York Medical Exchange, 630 Fifth Avenue, 42nd St., New York, New York. Patricia Edgerly, Director. No registration fee. C

WANTED — ASSISTANT; BY INTERNIST, DIPLOmate, American Board, on faculty university medical school; busy private practice; opportunity early partnership; university medical center; Middle West. 709, Burneice Larson, Medical Bureau, Palmolive Building, Chicago. C

DIPLOMATE, AMERICAN BOARD ANESTHESIOLogy associated by group of 5 highly qualified surgeons; well established in Catholic university city 750,000; full time; Central; D-218, Woodward Medical Bureau, 185 North Wabash, Chicago. C

(Continued on next page)

THE LEADER SINCE 1907

for quick, accurate blood pressure readings

YES, for 43 years, *Tycos* Aneroid* has meant the ultimate in quick, accurate blood pressure readings. 43 years of scientific experience and know-how are packed into *your* Tycos Aneroid. Many Tycos Aneroids have given over a quarter-century of dependable service and are still going strong. Here are 8 good reasons why your next sphyg should be a Tycos Aneroid:

1. **ACCURATE** in any position!
2. **YOU KNOW** it's accurate as long as the pointer returns within zero!
3. **POINTER OSCILLATES** with each pulse beat, revealing any pulse irregularities!
4. **SAVES PRECIOUS TIME!** Zip open pocket case, circle Hook Cuff once around arm; and your Tycos Aneroid is on!
5. **16 DIFFERENT** adjustments on Hook Cuff to fit any size adult arm!
6. **CAN'T BALLOON** out at edges, throwing your readings out of whack!
7. **MANOMETER CLIPS** permanently on cuff, always ready for instant use! Minimizes accidental dropping.
8. **TEN YEAR** triple guarantee! That means we'll readjust your Tycos Aneroid free of charge even if you drop it! ("Readjust" does not include cost of broken parts.)

On display at your surgical supply dealer's. Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada.

*Registered Trade-Mark

ONLY $36.50

Complete with exclusive Hook Cuff, and zipper carrying case to slip easily into your pocket.

Tycos Aneroid

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

FACTS ABOUT VAGINAL TAMPONS

Clinical studies indicate cotton vaginal tampons like Meds meet the catamenial requirements of the normal menstruating woman. This careful research shows that when vaginal tampons are used:

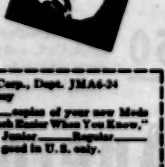
1. Normal tissue remains healthy with their use. [2, 5, 7, 4]
2. They do not cause cramps. [5]
3. They do not back up flow into the peritoneal cavity. [2, 3, 4, 5, 7]
4. Proper sizes do not alter normal anatomic virginity. [1]
5. They help avoid contamination from the anus. [7, 1]
6. They do not affect the bacteriologic flora or pH. [6]
7. They help avoid erotic stimulation. [1]

IN A RECENT NATIONAL SURVEY made by the Johnson & Johnson Research Foundation among 884 gynecologists and obstetricians, 5 out of 6 doctors reported tampons acceptable for normal women. The use of vaginal tampons is contraindicated in hypermenorrhea, mycotic vulvovaginitis and trichomoniasis, after spontaneous abortion and early in the puerperium.

On the basis of authoritative clinical evidence you may safely recommend MEDS [2] to all normal women for greater comfort and peace of mind during menstruation.

1. J.A.M.A. 139:698, 1945
2. Am. J. Obs. & Gyn., 49:510, 1944
3. Am. J. Obs. & Gyn., 46:280, 1943
4. West J. Surg., Obs. & Gyn., 51:180, 1943
5. Med. Rec., 155:516, 1942
6. Med. Rec., Ann., 34:351, 1941
7. Clin. Med. & Surg., 46:227, 1939

"It's So Much Easier When You Know," the educational Meds lay booklet for women, will help you tell your patients about this better method of sanitary protection. We invite you to send for free professional copies. Mail this coupon today.



Personal Products Corp., Dept. JMA6-24
Milltown, New Jersey

Please send me _____ copies of your new Meds booklet, "It's So Much Easier When You Know," and _____ samples. Junior _____ Regular _____ Super _____. Offer good in U.S. only.

Name _____

Address _____

City _____ State _____

(Continued from preceding page)

GENERAL PRACTITIONER — CALIFORNIA LICENTIATE; excellent small town opening for established general man; clientele and $10,000 annually in 6 months; fee $1,000. Booth H-26, Continental Medical Bureau, Agency, 510 West 6. Los Angeles 14, California. C

WANTED—PHYSICIAN; TO LOCATE IN COMPANY owned town; attractive office with modern 5-room and laboratory facilities; hospital available at nominal rental; community salary to assure opportunities for establishing own practice. Virginia 710, Bernstein Larson, Medical Bureau, Palmolive Building, Chicago. C

MAYO TRAINED, CERTIFIED INTERNIST — NOW forming group partnership; location well established eastern (D-36) town, also interested (D-2051) in practice of years in this fashionable resort; 25,000 which serves 10 mile area; hotel now 110 bed hospital opened recently to 200 bed; ideal for internist and surgeon. Woodward Medical Bureau, 185 North Wabash, Chicago. C

PACIFIC COAST MEDICAL BUREAU INVITES you to visit their offices during the AMA convention to see Pacific Coast and California as West Coast Headquarters. Suite 1000 Russ Building, San Francisco 4, California. (Agency) C

WANTED — RADIOLOGIST; TO SERVE AS ASSISTant professor of radiology, university medical school; for 1 year; $4,000 plus private practice; booth H-2, 510 West 6, Los Angeles 14, California. C

WANTED — ORTHOPEDIST; TO ASSOCIATE WITH 2 American Board orthopedists with active private practice; in busy Pacific Northwest city 70,000; must be personally qualified, ethical, cultured and interesting personality; 1178, Woodward Medical Bureau, 185 North Wabash, Chicago. C

WANTED — PEDIATRICIAN; TO BECOME ASSOciated with obstetrician-gynecologist, diplomate, well established in private practice; university town of 60,000; Pacific Coast; 710, Bernstein Larson, Medical Bureau, Palmolive Building, Chicago. C

ORTHOPEDIST—CALIFORNIA LICENTIATE; ASSOciate diplomate that specialty; fee to AMA Mem. Booth H-24, Continental Medical Bureau, Agency, 510 West 6, Los Angeles 14, California. C

WANTED—PATHOLOGIST; DIPLOMATE; TO DIRECT department large general hospital having teaching affiliations; must be qualified for teaching; interesting community, western city, medical center; $15,000 increasing to $20,000. 714, Bernstein Larson, Medical Bureau, Palmolive Building, Chicago. C

CERTIFIED OBSTETRICIAN-GYNECOLOGIST — FOR practice of group composed of 17 doctors; all certified or eligible; college city 70,000; to $11,000; partnership possibility; Northwest; D-253, Woodward Medical Bureau, 185 North Wabash, Chicago. C

WANTED—ASSOCIATE MEDICAL DIRECTOR; EASTern plant of large company; approximately 2000 employees; preferably one interested in general medicine, surgery and industrial work. 100,000. 713, Bernstein Larson, Medical Bureau, Palmolive Building, Chicago. C

PSYCHIATRIST—PRIVATE SANATORIUM; LONG Island, New York theater district; $7000, maintenance. New York Medical Exchange, 420 Fifth Avenue, 42nd St., New York, New York. Patricia Hagerty, Director. No registration fee. C

WANTED — ORTHOPEDIC SURGEON; DIPLOMATE; to locate associated with department of orthopedic surgery, 25 bed clinic building own hospital, 100 beds; college town of 40,000; Northwest. 712, Bernstein Larson, Medical Bureau, Palmolive Building, Chicago. C

WANTED — PHARMACOLOGIST; PENNSYLVANIA licensed; to investigate and interpret clinical trial of new drugs; work closely in university medical center; enthusiastic personality, clinical investigation insight essential; to $12,000. D-110, Woodward Medical Bureau, 185 North Wabash, Chicago. C

WANTED—ASSOCIATE MEDICAL DIRECTOR AND staff physicians; former could be experienced in tuberculosis work or trained in internal medicine; hospital surgery under consideration; 97000-300000; middle western city. 717, Bernstein Larson, Medical Bureau, Palmolive Building, Chicago. C

INDUSTRIAL PHYSICIAN — CALIFORNIA LICENtiate; John 5 established years; future partner; fee to AMA Mem; Booth H-28, Continental Medical Bureau, Agency, 510 West 6, Los Angeles 14, California. C

WANTED — GENERAL PRACTITIONER; PREFERably with 5 to 10 years experience; to direct outpatient department 200 bed hospital serving complete, large industrial company; 97500-$6000; college town, 150,000; Mid-West. 715, Bernstein Larson, Medical Bureau, Palmolive Building, Chicago. C

EXPERIENCED RADIOLOGIST — HEAD DEPARTment fairly large general hospital; western city 25,000; no conference or teaching; $15,000 plus private usage should equal $18,000-$25,000 highly recommended; D-102, Woodward Medical Bureau, 185 North Wabash, Chicago. C

WANTED—INTERNIST; WHOSE SUBSPECIALTY IS gastroenterology; to become associated with group specializing in internal medicine and gastroenterology; diplomate or eligible; university medical center; West. 716, Bernstein Larson, Medical Bureau, Palmolive Building, Chicago. C

ASSOCIATE—IN GENERAL PRACTICE; RICH FARMing territory; new hospital unit equipped offering; prestige ready. New York Medical Exchange, 420 Fifth Avenue, 42nd St., New York, New York. Patricia Hagerty, Director. No registration fee. C

WANTED—RADIOLOGIST; DIPLOMATE OF AMERIcan Board and of outstanding qualifications; to head department, fairly large general hospital; preferably one of geographical outlook; $18,000-$20,000. Perish Lloyd, 720, Bernstein Larson, Medical Bureau, Palmolive Building, Chicago. C

WELL ESTABLISHED CLINIC—NEEDS ANESTHESIologist to head department and also assistant for general practice; American Board men or eligibility required; staff of 24 outstanding specialists; patients over 60,000. 714, Bernstein Larson, Medical Bureau, Palmolive Building, Chicago. C

CONSTANT RESEARCH

INVENTED in 1861, Hanger Artificial Limbs have been constantly improved over the years. Today, the Hanger Leg is recognized as one of the world's finest artificial limbs.

Hanger Research is continually developing and testing new ideas, new methods, and new materials. From these efforts have come many outstanding contributions, adding greatly to the safety and to the comfortable agility of the limb. The control, dural light construction, natural action joints, the flexible foot, are a few of the many advancements of recent years.

The many Hanger Centers in many key cities throughout the United States are constantly studying, planning and developing new improvements to give you an even better artificial limb.

HANGER ARTIFICIAL LIMBS

ALBANY 6, N. Y.
ATLANTA 1, GA.
BALTIMORE 1, MD.
BIRMINGHAM 1, ALA.
BOSTON 16, MASS.
CHARLESTON 2, W. VA.
CHARLOTTE 2, N. C.
CHICAGO 7, ILL.
CINCINNATI 2, OHIO
COLUMBIA, S. C.
COLUMBUS 8, OHIO
INDIANAPOLIS 2, IND.
JACKSONVILLE, FLA.
MEMPHIS, TENN.
MIAMI, FLA.
MILWAUKEE 4, WIS.
NASHVILLE, TENN.
NEW ORLEANS, LA.
NEW YORK 11, N. Y.
OKLAHOMA CITY 2, OKLA.
PHILADELPHIA 7, PA.
PITTSBURGH 30, PA.
RALEIGH, N. C.
RICHMOND 19, VA.
ROANOKE 11, VA.
SAN FRANCISCO 2, CALIF.
ST. LOUIS 3, MO.
TAMPA, FLA.
TOLEDO, OHIO
WASHINGTON 13, D. C.
WILKES-BARRE, PA.

Vitarine

brand of

ALUMINUM HYDROXIDE GEL, U.S.P.
AMINOPHYLLINE INJECTION, U.S.P.

Pharmaceutical Products of Exceptional Merit

PARENTERAL PRODUCTS
AMPULS and VIALS
TABLETS · CAPSULES
ELIXIRS · SPECIALTIES
RIGID LABORATORY CONTROL

Samples upon request
Write for catalog #502

THE VITARINE CO., INC.
630 Eleventh Ave. New York 19, N. Y.

WANTED—GENERAL PRACTITIONER; QUALIFIED to operate; to locate in community now in Wyoming; fishing and hunting area; office space available; excellent schools, modern hospital; possibility of retained by company. 721, Executive Larson, Medical Bureau, Palmolive Building, Chicago. C

PEDIATRICIAN—CALIFORNIA LICENTIATE; wanted for excellent group practice association; southern California. See us at AMA Meet; Booth E-34, Continental Medical Bureau, Agency, 510 West 6, Los Angeles, California. C

WANTED—YOUNG PSYCHIATRIST; TO BECOME associated with 2 psychiatrists, Midwestern, interested in private practice; town of 70,000, having facilities of 2 medical schools; 3216-Wood, 722, Executive Larson, Medical Bureau, Palmolive Building, Chicago. C

WANTED—PEDIATRICIAN; FOR LABOR WELL ESTABLISHED clinic, with 4 pediatricians presently on staff; must be under 35 and eligible for Association Board; midwestern university city; salary open; D-354, Woodward Medical Bureau, 185 North Wabash, Chicago. C

WANTED—YOUNG PROCTOLOGIST; PREFERABLY American Board qualified; to head department of new clinic; university connected; excellent opportunity. 721, Executive Larson, Medical Bureau, Palmolive Building, Chicago. C

WANTED—GENERAL PRACTITIONER; TO ASSOCIATE with well established doctor with excellent all year practice; Southern Illinois university town; need of 2; salary, beginning salary; D-721, Woodward Medical Bureau, 185 North Wabash, Chicago. C

DIRECTOR—HEALTH SERVICE; LIBERAL ARTS college; university connected; to succeed 2 full time doctors; part time, resident; enrollment over 10,000; \$7000 for 9 months; Central; D-352, Woodward Medical Bureau, 185 North Wabash, Chicago. C

SHAY MEDICAL AGENCY
55 E. Washington Street
Chicago 2, Illinois

ANESTHESIOLOGIST: Certified or eligible specialist, required central for 100 bed general hospital; to serve 3 doctor group; salary open; Shay 2-1, 55 E. Washington.

DERMATOLOGIST: Certified, group consulting and teaching, to locate in one of Chicago's suburban communities; to succeed retiring doctor; guaranteed income of \$15,000 a year the first year; Shay 2-2, 55 E. Washington.

DENTIST: Graduate dental, for an EENT group; to head department in 125 bed hospital; Midwest; salary open; Shay 2-3, 55 E. Washington.

GENERAL PRACTICE: Ambitious young man to small established town; good clientele; good income for beginner; Shay 2-4, 55 E. Washington.

INDUSTRIAL: To \$15,000, of the three year type; Shay 2-5, 55 E. Washington.

INTERNIST: Young internist, Board eligible, for group practice in growing city; must be completely qualified for general medicine; new clinic; salary to start, \$12,000 a year; \$2,000 a year guaranteed; Shay 2-6, 55 E. Washington.

LOCATION: An progressive small town with large drawing territory; well equipped hospital available; an ideal location for physician with a flair for surgery; Shay 2-7, 55 E. Washington.

LOCUM TENENS: Graduate, general surgery; Shay 2-8, 55 E. Washington.

MEDICAL DIRECTOR: Graduate, opportunity for young man with private practice desires; opens 15 to 20 hrs. per week; can be located in small city; must have ability to get along with people; salary \$12,000 a year; Shay 2-9, 55 E. Washington.

OBSTETRICIAN: Assistant wanted; to work with outstanding obstetrician; specialized in 10% of cases; \$10,000 a year; Shay 2-10, 55 E. Washington.

OPHTHALMOLOGIST: To locate; opportunity to purchase practice of ill; considerably for full ownership; payment to be made from income; salary at first; Shay 2-11, 55 E. Washington.

ORTHOPEDIST: For small town; a retiring orthopedist desires to turn his practice over to young man; will introduce the man to all of the local patients; this is a real opportunity; will need \$5,000 for purchase of accounts; to \$15,000 a year; Shay 2-12, 55 E. Washington.

OTOLARYNGOLOGIST: To succeed 2 retiring men; established and clientele; to associated doctor; to locate in Illinois; Shay 2-13, 55 E. Washington.

PATHOLOGIST: Board eligible for South Dakota pathologist; to begin July 1st; 100 beds; salary open; Shay 2-14, 55 E. Washington.

PATHOLOGIST (RESIDENCY): Resident or senior resident for 200 bed general hospital; \$150 and \$200 a month; Shay 2-15, 55 E. Washington.

PEDIATRICIAN: Certified EENT man and pediatrician need general; clientele already established; salary open to start; will lead to 5 percentage; progressive; Shay 2-16, 55 E. Washington.

PHARMACEUTICAL: Young physician; for medical department of large pharmaceutical house; to \$10,000 a year; medical work; salary ranges from \$5,000 to \$10,000; Shay 2-17, 55 E. Washington.

PSYCHIATRIST: Clinical director; for correspondence school; medical center; \$10,000; Shay 2-18, 55 E. Washington.

PUBLIC HEALTH: Physician needed; for capable man of broad training; to locate in small city; \$6,000 a year; some training; Shay 2-19, 55 E. Washington.

RADIOLOGIST: Young certified man; for accredited hospital; to associate with doctor who is retiring; to purchase his practice; guaranteed yearly income to \$15,000; Shay 2-20, 55 E. Washington.

STUDENT HEALTH: Assistant physician; needed for well known mid-west university; \$5000 a year to start with 10% increase; Shay 2-21, 55 E. Washington.

SURGEONS: For young group; 4 members; grouped and private beds; well equipped; can establish to be connected with 2 hospitals; Shay 2-22, 55 E. Washington.

SURGICAL RESIDENCY: Residency, July 1st; approved by AMA and the American Board of Surgery; \$150 a month; Shay 2-23, 55 E. Washington.

TUBERCULOSIS: Assistant for sanatorium medical director; mid-west university; \$5000 a year with increase; graduate of approved school; Shay 2-24, 55 E. Washington.

VENEREOLOGIST: Associate professor wanted; to teach course in venereal diseases to graduate students; \$5000 a year for 9 months medical year.

(Continued on next page)

GYN-FLAP'O HYGEIA HAS ALL THESE FEATURES

1. Solid Leather, Pictured Grain. 2. Two Tool Pockets. 3. Sanitary Rubber Hand Grips. 4. Deep Fitted Shoulder Carrier Strap. 5. Solid Brass Bumper & Feet. 6. Full Length Divider Pocket with Removable Cover. 7. Six 840 Size (16x6x6—\$56.50 Six 865 Size (17x8x7—\$58.50

Both sizes made in Army Brown or Black

SEND FOR BROCHURE AND NAME OF YOUR DEALER

A DISTINGUISHED BAG WITH *Distinguishing* FEATURES
for the Physician

"GYN-FLAP'O"
HYGEIA
MEDICAL BAG
...it holds so more!

Here is a bag physicians have found both practical in use and distinguished in appearance. The famous patented "GYN-FLAP'O" feature allows the bag to be opened to full length and kept out of the way, giving full access for packing. It is the most practical bag ever made, and can be packed in the very easiest orderly manner without crowding or jamming the contents. Made of fine, soft, pliable leather by craftsmen, the "GYN-FLAP'O" Hygeia is preferred by doctors everywhere.

NATHAN PRODUCTS CORP. • 215 78th PROSPECT AVE. • NEW YORK 57, N.Y.

...and keep up with latest medical advances...

Many fine current medical publications tell of new diagnostic procedures, operative procedures, therapy and drugs. If you could read them all today — tomorrow your patients might benefit. Your patients want you to be right up-to-the-minute and now you can do this with our MEDICAL ABSTRACT SERVICE.

Selected Articles from Over 100 Medical Journals...

chosen each month by our Editorial Advisory Board, who are leaders in their specialized fields. Our editors then digest the material for easy reading and rush it to you. The service includes latest proved medical findings, what to prescribe, dosages and specialized aids.

Easy to Read, Easy to File, Easy to Find...

MEDICAL ABSTRACT SERVICE is printed on 4 x 6 indexed cards. No more hunting for an important article in a heap of magazines, or did you throw them away? You have a wealth of information at your finger-tips. Leading physicians have saved valuable time by relying on the MEDICAL ABSTRACT SERVICE since 1943.

It Costs You Less Than 2 Cents a Day...

to learn of medical advances as they happen. You can refer to the easy-to-find information when you need it. Why only wish you had time to read.

SEND COUPON NOW FOR *FREE* SPECIMENS OF MEDICAL ABSTRACTS AND PRICES.

Physicians' Record Company, Publishers of
Medical Abstract Service
161 W. Harrison Street, Chicago 5, Illinois

the busy physician's finding ...brief, complete, functional

Abstracts are printed on 4x6 cards. The Golden and Filing Manual (Issued on Index Bibles) are furnished with first subscription without charge.

Name_____

Address_____

City and State_____ AMA-6

(Continued from preceding page)

WANTED — TUBERCULOSIS STAFF PHYSICIAN: single; an American citizen and eligible Ohio license; $5000-$6500 year, plus full maintenance; D-294. Woodward Medical Bureau, 185 North Wabash, Chicago. C

WANTED—SEVERAL PHYSICIANS; FOR PART TIME appointments in Chicago; hours: 10 AM to 4:30 PM, 4:30 PM to 11 PM; general practice, emergencies, first aid; 3 months commencing immediately. 727, Burneice Larson, Medical Bureau, Palmolive Building, Chicago. C

WANTED — HOUSE PHYSICIAN; FOR WELL equipped 120 bed general voluntary hospital; southwest college city 35,000; $700 plus room and meals at hospital; D-1532. Woodward Medical Bureau, 185 North Wabash, Chicago. C

WANTED — PHYSICIANS; INTERESTING OPPORtunities for American Board men qualified to head departments, general and industrial physicians, recent graduates desirous of further training; strictly confidential. Burneice Larson, Medical Bureau, Palmolive Building, Chicago. C

INTERNS AND RESIDENTS WANTED

*The * signifies a hospital approved for internships and the + approved for residencies in specialties by the Council on Medical Education and Hospitals of the A. M. A. Consult Council's approved list for types of internships and residencies approved.*

RESIDENTS AND INTERNS—TWO ASSISTANT RESIdents in surgery, $150; resident in medicine, $200; assistant resident in medicine, $150; rotating interns, $100; resident in pediatrics, $200; 100 bed hospital + with 100 bed addition and 200 bed affiliation, general hospital, approved; all salaries plus maintenance. City Memorial Hospital, Winston-Salem, North Carolina. D

OPPORTUNITY—FOR TWO RESIDENTS IN PEDIatrics; at 1st and 2nd year training levels; with salary of $75 and $100 respectively; training includes university hospital dispensary and affiliated hospitals. Write: Dr. Herman M. Jahr, College of Medicine, University of Nebraska, 42nd and Dewey Avenue, Omaha 5, Nebraska. D

RESIDENCIES IN ANESTHESIOLOGY—QUALIFIED instruction in all methods; with special emphasis on pediatric and regional anesthesia and basic sciences. Apply: M. Digby Leigh, MD, Director of Anesthesiology, Vancouver General Hospital, Vancouver, British Columbia. D

WANTED — RESIDENT IN PATHOLOGY; ONE OR 2 years appointment; beginning July 1, 1950 or later; fully approved. Apply: Superintendent, St. Clare's Hospital,*+ 415 West 51st Street, New York City, New York. D

RESIDENT MALE OR FEMALE PHYSICIAN—FOR suburban Chicago hospital; 100 beds; wonderful opportunity for rounded experience in general practice. Box 9766 D, % AMA.

WANTED—TWO INTERNS; FOR UNEXPECTED vacancies; starting July 1, 1950; this is an approved rotating internship in a 250 bed hospital *+ which has very active surgical, obstetrical and medical services, approved residencies in anesthesiology and pathology and a comprehensive teaching program; stipend $125 per month plus maintenance, including living quarters for married physicians with families. Apply: John J. [illegible], MD, Chairman of Intern Committee, Tacoma General Hospital, Tacoma, Washington. D

PHYSICIANS—MALE OR FEMALE; REGISTERED IN Pennsylvania; general duty residency in small approved general hospital; salary open; full maintenance; excellent opportunity for a refresher course. Box 9757 D, % AMA.

UNIVERSITY AFFILIATED APPROVED THREE year internal medicine residency; 2 appointments available; 325 bed general hospital.*+ Apply: Mount Carmel Mercy Hospital, Detroit 35, Michigan. D

GENERAL RESIDENCY—STARTING JULY 1, 1950; salary $300 per month; 155 bed general hospital; ACS approval; full maintenance. Apply: Superintendent, Mercy Hospital, Sacramento, California. D

RESIDENCY — INTERNAL MEDICINE; AVAILABLE immediately; approved; 235 bed general hospital *+; $150 monthly, full maintenance. St. Peter's General Hospital, New Brunswick, New Jersey. D

WANTED—RESIDENT IN MEDICINE; APPROVED by AMA and the American Board of Internal Medicine. The Methodist Hospital,*+ Houston, Texas. D

FELLOWSHIPS—IN DOMICILIARY MEDICINE; ONE year beginning July 1st and September 1st; Board accredited; clinic and home service; salary $1800 plus mileage allowance; automobile required. Joseph Rosenthal, MD, Boston Dispensary, (unit of New England Medical Center), 25 Bennet Street, Boston, Massachusetts. D

PREPARE FOR THE STATE BOARD EXAMS with Kepper's New 1949 revised 5th Edition Medical State and National Board Summary; illustrated; $5. Coll Press, 549 Main St., Paterson 1, New Jersey. D

RESIDENCIES — IN OTOLARYNGOLOGY, PATHOLogy, radiology, and psychiatry; at the Gallinger Municipal Hospital *+ in affiliation with Georgetown and George Washington Medical Schools; available July, 1950; for graduates of approved medical schools who have had approved internships of 1 year or more; salary $1200 annually. Write: Chief of Staff, Gallinger Municipal Hospital, Washington 3, District of Columbia. D

WANTED—GENERAL RESIDENT; ROTATING SERvice; 1 year; $150 per month plus maintenance; must be a graduate of an AMA approved medical school; hospital * approved for intern training; 250 beds when addition now under construction is completed. Apply: Chairman, Intern Committee, Luther Hospital, Eau Claire, Wisconsin. D

AVAILABLE — RESIDENCY OR ASSISTANT RESIdency; in otolaryngology; has just become available July 1, 1950; due to unusual circumstances; fully approved by AMA and ACS; excellent teaching program; university affiliation; uniforms, board and $165 monthly. Apply: Director, South Baltimore General Hospital,*+ 1213 Light Street, Baltimore 30, Maryland. D

Ann Woodward Director

Midsummer Is No Time For Weighty Decisions

—BUT WHEN did crises ever wait upon the weather? . ? . . ?

If circumstances dictate that you must find an office assistant or clinic colleague NOW, then find him you must.

There are ways, however, of easing your search for a properly qualified medical man. For years we have made it our business to know those ways—to keep ample and accurate records of promising candidates; to screen our files meticulously for each employer; to furnish the type of information YOU MAY WANT with speed and efficiency.

Should you face a personnel crisis, we are ready to help—YEAR ROUND. Write, wire or phone

WOODWARD Medical Personnel Bureau
NINTH FLOOR • 185 N. WABASH • CHICAGO 1
OUR FIFTY-FOURTH YEAR

KLETT

Scientific Instruments

Photo-Electric Colorimeters, Bio-Colorimeters, Hemoglobinometers, Glass Standards, Hemometers.

Klett-Bio Colorimeter No. 610

KLETT MANUFACTURING CO.

177 East 87th St. New York 28, N.Y.

Books Received

Books received by THE JOURNAL are acknowledged in this column. Selections will be made for more extensive review in the interests of THE JOURNAL readers as space permits. Books listed in this department are not available for lending. Information concerning them will be supplied on request.

CONGENITAL ANOMALIES OF THE HEART AND GREAT VESSELS: CLINICOPATHOLOGIC STUDY OF 132 CASES. By Thomas J. Dry, and others. Publication No. 47, American Lecture Series, A Monograph in American Lectures in Pathology, edited by Paul R. Cannon, M.D., Professor of Pathology, University of Chicago School of Medicine, Chicago, Ill. Cloth. $4.50. Pp. 68, with 80 illustrations. [Postgraduate Medicine, 512 Essex Bldg., Minneapolis 2, 1948]; Reproduced with Permission by Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill., [1949].

HANDBOOK OF MEDICAL MANAGEMENT. By Milton Chatton, A.B., M.D., Instructor in Medicine, University of California Medical School, San Francisco, Sheldon Margen, A.B., M.D., Clinical Instructor in Medicine, University of California Medical School, San Francisco, and Henry D. Brainerd, A.B., M.D., Assistant Clinical Professor of Medicine and Pediatrics, University of California Medical School, San Francisco. Boards. $3. Pp. 476. University Medical Publishers, Post Office Box 761, Palo Alto, Calif., 1949.

ACUTE INJURIES OF THE HEAD: THEIR DIAGNOSIS, TREATMENT, COMPLICATIONS AND SEQUELS. By G. F. Rowbotham, B.Sc., F.R.C.S., Surgeon in Charge, Department of Neurological Surgery, Newcastle General Hospital, Newcastle-on-Tyne. With a Foreword by Professor Norman M. Dott, C.B.E., M.B., Ch.B., Professor of Neurological Surgery, University of Edinburgh. Third edition. Cloth. $7. Pp. 480, with 259 illustrations. The Williams & Wilkins Company, Mount Royal & Guilford Aves., Baltimore 2, 1949.

EXPERIMENTAL CELL RESEARCH: SUPPLEMENT I. Edited by Torbjörn Caspersson and Ludwik Monné. Published with the Aid of Grants from the Swedish State and from the United Nations Educational, Scientific and Cultural Organization. Proceedings of the 6th International Congress of Experimental Cytology, Stockholm, July 10th-17th, 1947. Cloth. $10. Pp. 603, with illustrations. Albert Bonnier, Stockholm; Academic Press, Inc., 125 E. 23rd St., New York 10, 1949.

NEUROCIRUGÍA. Tomo dedicado a los trabajos presentados al II Congreso sudamericano de neurocirugía, celebrado en Santiago de Chile, desde el 21 al 27 abril de 1947. Instituto central de neurocirugía y neuropatología, Pabellón "Harvey Cushing." (Director: Dr. A. Asenjo). Volumen IV; Volumen V. Paper. $500.—m.1.; $400.—m.1. Pp. 316; 314, with illustrations. Universidad de Chile y Servicios de beneficencia y asistencia social, Santiago, Chile, 1948.

NUTRITION AND RESISTANCE TO CLIMATIC STRESS WITH PARTICULAR REFERENCE TO MAN. By H. H. Mitchell and Marjorie Edman. Research and Development Branch, Office of the Quartermaster General, Quartermaster Food and Container Institute for the Armed Forces. Paper. Gratis. Pp. 112. Department of the Army, Quartermaster Food & Container Institute for the Armed Forces, 1849 W. Pershing Road, Chicago 9, Ill., 1949.

FRACTURES AND DISLOCATIONS IN GENERAL PRACTICE. By John Hosford, M.S., F.R.C.S., Surgeon to St. Bartholomew's Hospital, London. Second edition by W. D. Coltart, M.B., B.S., F.R.C.S., Assistant Orthopædic Surgeon to St. Bartholomew's Hospital. Cloth. $5. Pp. 290, with 87 illustrations. Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, 49 E. 33rd St., New York 16; 90 Great Russell St., London, W.C.1, 1950.

VITAMINS AND HORMONES: ADVANCES IN RESEARCH AND APPLICATIONS, VOLUME VII. Edited by Robert S. Harris, Professor of Biochemistry of Nutrition, Massachusetts Institute of Technology, Cambridge, Mass., and Kenneth V. Thimann, Professor of Plant Physiology, Harvard University, Cambridge, Mass. Cloth. $7.80. Pp. 488, with illustrations. Academic Press, Inc., Publishers, 125 E. 23rd St., New York 10, 1949.

(Continued on page 52)

ORTHOPEDIC RESIDENCY—AVAILABLE JULY 1, 1950; allows 1½ years credit toward Orthopedic Boards; salary $200 a month with maintenance. Reply: Homer H. Stryker, MD, Chief of Orthopedics, Borgess Hospital,+ Kalamazoo, Michigan. D

WANTED—RESIDENTS IN MEDICINE; FOR IMmediate service and for July, 1950; at the Detroit Memorial Hospital,*+ formerly St. Mary's Hospital; 300 bed general hospital. Reply: Medical Director, Detroit Memorial Hospital, 1420 St. Antoine Street, Detroit 26, Michigan. D

WANTED—A ROTATING RESIDENCY IS OPEN; IN a 100 bed general hospital; for a graduate of a class A medical college; hospital has a well organized medical staff and offers a splendid service; the pay is $300 per month plus full maintenance. For information write: Director, John D. Archbold Memorial Hospital, Thomasville, Georgia. D

A RESIDENCY IN RADIOLOGY IS AVAILABLE—AT the Mount Sinai Hospital *+ of Philadelphia, Pennsylvania; beginning July 1, 1950; the hospital has an approved residency for 3 years training; the Mount Sinai Hospital has over 300 beds and is approved in all specialties. D

12 MONTH AMA APPROVED ROTATING INTERNships; beginning immediately; $100 plus maintenance; 275 bed hospital.* Apply: Director, Perth Amboy General Hospital, 530 New Brunswick Avenue, Perth Amboy, New Jersey. D

WANTED—TWO RESIDENT PHYSICIANS; ONE internal medicine; 1 general resident; to begin July 1, 1950; approved 172 bed hospital; stipend $250 monthly, and full maintenance. Apply: Administrator, Pottsville Hospital, Pottsville, Pennsylvania. D

RESIDENTS WANTED AT ONCE—MUST BE A GRADuate of grade A school; rotating service; 200 bed hospital *+ approved for internships and mixed residencies; salary $200 per month plus maintenance. Methodist Hospital, Peoria 8, Illinois. D

WANTED—RESIDENT PHYSICIANS; BAPTIST HOSpital,+ Birmingham, Alabama; available on or before July 1, 1950; salary $300 monthly with complete maintenance; excellent residency for general practice; large, active medical and surgical services. Box 9727 D, % AMA.

RESIDENT DOCTOR—APPOINTMENT JULY 1ST FOR 6 months; approved, general voluntary Westchester, New York hospital; substantial remuneration; prerequisites approved medical school and internship. Box 9730 D, % AMA.

WANTED—RESIDENT PHYSICIAN; PENNSYLVANIA license or eligible; in 125 bed, general state owned and operated hospital; salary $400 per month, plus maintenance. Write: Chairman, Resident Committee, Connellsville State Hospital, Connellsville, Pennsylvania. D

FULLY APPROVED MEDICAL RESIDENCY—AVAILable September 1, 1950; liberal stipend and maintenance; excellent living conditions. Write: Administrator, Riverside Hospital,*+ Newport News, Virginia. D

WANTED — TWO RESIDENTS IN PSYCHIATRY; male or female; starting salary $3420. Write: W. C. Brinegar, MD, Superintendent, Cherokee State Hospital,+ Cherokee, Iowa. D

APPROVED OBSTETRIC RESIDENCY—AVAILABLE July 1st; St. Ann Maternity Hospital,+ 3400 Woodland Avenue, Cleveland, Ohio. Address inquiries: Sister M. Celestia, Administrator. D

WANTED—RESIDENT IN OBSTETRICS; APPROVED 1 year; 1400 deliveries; Nebraska teaching hospital *+; $100. Box 9897 D, % AMA.

WANTED—RESIDENT; FOR A COMBINED SERvice, ophthalmology and otolaryngology; fully approved hospital +; starting salary $100 a month and complete maintenance; give full details in 1st reply. Box 9840 D, % AMA.

WANTED—RESIDENT; FOR AMA APPROVED ONE year residency in obstetrics and gynecology; excellent educational program; salary and maintenance. Apply: Superintendent, Wesley Hospital,*+ Wichita 6, Kansas. D

WANTED—INTERN; 105 BED HOSPITAL; TRAINing program approved AMA, ACS; salary $125; individual room and maintenance; also resident; salary $250; graduate class A school. Kanawha Valley Hospital, Charleston, West Virginia. D

SURGICAL RESIDENCY ASSISTANT—AVAILABLE July 1st fully approved hospital *+; 200 patients; residency approved for training in preparation for surgical specialties as shown on pages 1210 and 1216 of April 15th number of Journal of AMA; $125 plus uniforms and maintenance; class A graduates only. Lawrence Memorial Associated Hospitals, New London, Connecticut. D

WANTED—RESIDENT IN EENT; BEGINNING JULY 1, 1950; large, active department; when a resident is secured approval will be requested; all other services in this hospital approved. Shreveport Charity Hospital,*+ Shreveport, Louisiana. D

APPROVED TWO YEAR RESIDENCY—AVIALABLE in otolaryngology; complete didactic and clinical courses offered. Apply: Superintendent, Episcopal, Eye, Ear and Throat Hospital,+ 1147 15th St., N.W., Washington 5, District of Columbia. D

WANTED—FIRST ASSISTANT RESIDENT; IN MEDIcine; in 187 bed, fully approved hospital *+; vacancy occurred due to illness of doctor contracted. Contact: Administrator, West Baltimore General Hospital, Baltimore 16, Maryland. D

PATHOLOGY RESIDENT — AMA AND BOARD approved 1 to 3 years; immediately available; 4700 surgicals; 100 autopsies; active teaching program; increasing stipend plus maintenance. Write: Pathologist, Research Hospital,*+ Kansas City, Missouri. D

WANTED—CHIEF MEDICAL RESIDENT AND ASsistant medical resident in 185 bed general hospital,*+ approved; beginning July 1, 1950; stipend $115 with full maintenance. Write: Medical Director, Chesapeake and Ohio Hospital, Huntington, West Virginia. D

WANTED — SENIOR RESIDENT; FOR AMA APproved 3 year residency in internal medicine; excellent educational program; salary and maintenance. Apply: Superintendent, Wesley Hospital,*+ Wichita 6, Kansas. D

(Continued on next page)

IN YOUR OFFICE

When the stethescope indicates a cardiac abnormality take an electrocardiogram.

You can do it easily and quickly in your own office with a BURDICK DIRECT-RECORDING ELECTROCARDIOGRAPH: no chemicals, no dark room, no ink.

The record is accurate and permanent, automatically marked for timing and for leads.

The Burdick

DIRECT-RECORDING ELECTROCARDIOGRAPH

See your Burdick dealer, or write us—

Burdick

THE BURDICK CORPORATION
MILTON, WISCONSIN

(Continued from preceding page)

PHYSICIAN—FOR RESIDENCY PULMONARY DISease; hospital + approved AMA & ACS; complete medical, surgical and out patient services; good salary and full maintenance; vacancy also for physician trained in pulmonary disease; graduates of approved American medical schools preferred; approved internship required; metropolitan location; East. Box 9606 D, % AMA.

SURGICAL RESIDENCY AVAILABLE — APproved by American Medical Association and American Board of Surgery; beginning July 1, 1950; 370 bed general hospital * +; full maintenance plus salary. Superintendent, St. Vincent's Hospital, Erie, Pennsylvania. D

WANTED — RESIDENT PHYSICIAN; LICENSED TO practice in California or eligible for reciprocity; 60 bed, ACS approved general hospital; salary $300 per month and maintenance; start July 1, 1950. Apply: Administrator, Hahnemann Hospital, 3698 California Street, San Francisco 18, California. D

RESIDENCY—OPHTHALMOLOGY; 1000 BED GENeral teaching hospital * +; connected with University of Buffalo, New York; training includes orthoptics, refractions, and all branches of eye surgery; stipend $1700 per annum with yearly raises; opening for July 1, 1950. Apply: Edward J. Meyer Memorial Hospital, Buffalo 15, New York. D

RADIOLOGY RESIDENCY—ONE YEAR; APPROVED. Evangelical Deaconess Hospital,* + 1681 W. Wisconsin Ave., Milwaukee 3, Wisconsin. D

WANTED—JULY, 1950; TWO RESIDENTS; IN INternal medicine; 220 bed full approved general hospital.* + Apply: Supt., St. Elizabeth Hospital, Youngstown, Ohio. D

OPENINGS ARE AVAILABLE—FOR MEDICAL RESIdents; beginning July, 1950; living quarters for married men. St. Joseph's Infirmary,* + Atlanta, Georgia. D

WANTED—RESIDENT PHYSICIANS; BEGINNING July 1, 1950; county general hospital +; 130 beds; active out-patient service; approved AMA for general practice; ACS; salary $225 plus complete maintenance for self; excellent opportunity for experience and training for general practice. Apply: John C. Sharp, MD, P O. Box 1611, Salinas, California. D

ONE OPENING—FOR OB-GYN RESIDENT; JULY 1, 1950; living quarters for married men without children. Apply: St. Joseph's Infirmary,* + Atlanta, Georgia. D

WANTED—RESIDENTS FOR GENERAL PRACTICE training; 400 bed hospital * +; AMA approved for internship and major specialties; well balanced teaching program. Write: Superintendent, Wesley Hospital, Wichita 6, Kansas. D

AVAILABLE—ROTATING INTERNSHIPS AND MEDical residencies; effective immediately; 235 bed hospital * +; approved by the American Medical Association and the American College of Surgeons for training of interns and residents; large out-patient department and well organized functioning general practice section. Box 9011 D, % AMA.

RESIDENCY — PSYCHIATRY; 1000 BED GENERAL teaching hospital * + connected with University of Buffalo, New York; new 150 bed psychiatric wing now under construction; training includes examination and disposition of patients referred into hospital for mental observation, also out patient work both child guidance and adult; stipend $1700 per annum with yearly raises; opening for July 1, 1950. Apply: Edward J. Meyer Memorial Hospital, Buffalo 15, New York. D

APPROVED RESIDENCY—ANESTHESIOLOGY; JULY 1, 1950; 282 bed general hospital * +; training in all types of anesthesia and block therapy; 3 month tuition at New York University College of Medicine in basic sciences as related to anesthesiology; salary, $125 per month 1st year, full maintenance; $150 per month 2nd year, full maintenance. Flushing Hospital and Dispensary, 44-14 Parsons Boulevard, Flushing, New York. D

WANTED—(TWO) RESIDENTS; FOR JULY 1, 1950; in surgery; offering training of 1 or 2 years' duration in preparation for residency training in the surgical specialties; service approved by the Council of American Medical Association; general hospital; 175 beds; 30 bassinets; applicants must be graduates of class A American or Canadian medical schools; stipend $150 per month and maintenance. The Deaconess Hospital,* + Clifton Ave. & Straight St., Cincinnati 20, Ohio. D

WANTED—TWO RESIDENT PHYSICIANS; BEGINning July 15th; salary $300 monthly plus maintenance; 50 bed private general hospital. North Dade Hospital, Inc., Le Jeune Road, Opa Locka, Florida. D

RESIDENT—TO START JULY 1, 1950; EXCELLENT opportunity to gain experience in all services of a general hospital; Pennsylvania license required. Northeastern Hospital, Philadelphia 34, Pennsylvania. D

WANTED—RESIDENTS; FOR JULY 1, 1950; TWO in medicine; 1 year; service approved by the American Medical Association; 175 beds; 30 bassinets, general hospital * +; applicants must be graduates class A American or Canadian medical schools; stipend $150 per month and maintenance. The Deaconess Hospital, Clifton Ave. & Straight St., Cincinnati 20, Ohio. D

ANESTHESIOLOGY RESIDENCY—APPROVED TWO year residency; integrated with other teaching program; starting July, 1950 or after; full maintenance and $100 1st year; $150 2nd year. Apply: Daniel C. Moore, MD, Director of Anesthesia, Virginia Mason Hospital,* + Seattle, Washington. D

WANTED — TWO RESIDENTS; JULY 1, 1950; residency in general practice for 1 year; general hospital,* + 175 beds, 30 bassinets; applicants must be graduates of class A medical schools; stipend $150 per month and maintenance. The Deaconess Hospital, Clifton Ave. & Straight St., Cincinnati 20, Ohio. D

INTERNSHIPS AVAILABLE—NOW AND JULY 1ST; general rotating service; 300 bed hospital * +; approved by the AMA and ACS; must be graduate of approved medical school; stipend $125 per month and full maintenance. Methodist Hospital, Peoria 5, Illinois. D

SURGICAL RESIDENCY—JUNIOR ASSISTANT; available July 1st; basic residency in possible 4 year approved program; salary $65 monthly; 240 beds. Lutheran Hospital,* + Cleveland 13, Ohio. D

IMPORTANT

to every SURGICAL SUPERVISOR

Only ATI

STEAM·CLOX

check all 3*

* THE 3 ESSENTIALS OF STERILIZATION: TIME, STEAM, AND TEMPERATURE

Heat alone is not enough for sterilization in your autoclave. Nor are steam and time enough. You need the *combined action of all three.* That is why more and more hospitals are safeguarding patients by putting an ATI Steam-Clox tag in every surgical pack.

* TIME No matter what the temperature and steam pressure inside your autoclave, ATI Steam-Clox can NOT change color until exposed long enough for destruction of all bacteria—with an ample margin of safety.

* STEAM If instead of *pure* bacteria-killing steam, you have residual air in your autoclave, a longer exposure is definitely required to kill the bacteria—and to turn ATI Steam-Clox from purple to green.

* TEMPERATURE Lower temperature requires a longer time to destroy bacteria—and to change ATI Steam-Clox from purple to green.

ASEPTIC-THERMO INDICATOR COMPANY
Dept 245 [illegible] W. Jefferson Blvd.
Los Angeles 16, California

Please send me samples of ATI Steam-Clox and helpful data on autoclave sterilization.

My name________________
Title________________
Hospital________________
Address________________
City________ State________

(Books Received Continued)

TUBERCULOSIS IN THE COMMONWEALTH: THE FULL VERBATIM TRANSACTIONS OF THE SECOND COMMONWEALTH AND EMPIRE HEALTH AND TUBERCULOSIS CONFERENCE, HELD IN LONDON FROM THE 5TH TO THE 8TH OF JULY, 1949. Paper. 15s. Pp. 411, with illustrations. National Association for the Prevention of Tuberculosis, Tavistock House North, Tavistock Sq., London, W.C.1, [1949].

CHEMOTHERAPY OF LEUKEMIA AND LEUKOSARCOMA. By William Dameshek, M.D., and others, New England Center Hospital, Tufts College Medical School, Boston, Mass. A Reprint of an Exhibit Presented at the American Medical Association Convention, Atlantic City, June 1949. Paper. $4.75. Pp. 54, with illustrations. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1950.

HEALTH SERVICE AREAS: ESTIMATES OF FUTURE PHYSICIAN REQUIREMENTS. By Joseph W. Mountin, Elliott H. Pennell and Anne G. Berger. Federal Security Agency, Public Health Service, Bureau of State Service, Public Health Bulletin No. 305. Paper. 45 cents. Pp. 89, with 6 illustrations. Supt. of Doc., Government Printing Office, Washington 25, D. C., 1949.

HELPFUL HINTS TO THE DIABETIC. By William S. Collens, B.S., M.D., Chief of the Diabetic Clinic, Maimonides Hospital, Brooklyn, New York, and Louis C. Boas, A.B., M.D., Chief of the Diabetic Clinic, Greenpoint Hospital, Brooklyn, New York. Cloth. $3. Pp. 135, with 64 illustrations. Charles C Thomas, Publisher, 301-327 East Lawrence Ave., Springfield, Ill., 1949.

ULCERS AND ECZEMA OF THE LEG, SEQUELS OF PHLEBITIS, ETC.: STUDIES ON STATIC DISEASES OF THE LOWER LIMBS AND THEIR TREATMENT. By Holger Bisgaard. Preface by H. Hauxthausen, M.D., Professor in the University of Copenhagen, Copenhagen. Paper. Pp. 111, with 36 illustrations. Ejnar Munksgaard Forlag, Nørregade 6, Copenhagen K, 1948.

HUMAN SEX ANATOMY: A TOPOGRAPHICAL HAND ATLAS. By Robert Latou Dickinson, M.D., F.A.C.S. Medical Aspects of Human Fertility Series Issued by the National Committee on Maternal Health, Inc. Second edition. Cloth. $10. Pp. 145, with 175 illustrations. The Williams & Wilkins Company, Mount Royal & Guilford Aves., Baltimore 2, 1949.

CANCER: CARCINO-RÉSISTANCE, CARCINO-INHIBITION. Par Michel Mosinger. Portugal—Universidade de Coimbra, Instituto de anatomia patologica, Arquivos de anatomia patológica, patologia correlativa e neuro-ergonologia, Volume XXXIII—1946-47 (Tome 1). Paper. Pp. 287, with 252 illustrations. Coimbra Editora, Limitada, Coimbra, 1947.

OBJECTIVE PSYCHOTHERAPY: PRINCIPLES, METHODS, AND RESULTS. By Ben Karpman, M.D., Chief Psychotherapist, St. Elizabeths Hospital, Washington, D. C. J. Clin. Psychol., Monograph Supplement, No. 6, July 1948. Paper. Pp. 154. Journal of Clinical Psychology, Medical College, University of Vermont, Burlington, Vermont, 1948.

THE 1949 YEAR BOOK OF OBSTETRICS AND GYNECOLOGY (OCTOBER, 1948-AUGUST, 1949). Edited by J. P. Greenhill, B.S., M.D., F.A.C.S., Professor of Gynecology, Cook County Graduate School of Medicine, Chicago. Cloth. $4.50. Pp. 629, with 132 illustrations. The Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1950.

CÁNCER Y PLACENTA: HIPOTESIS SOBRE UNA DE LAS LLAVES DEL REINO. Por Ricardo Aguilar Meza, M.D., F.A.C.P., F.A.C.S., superintendente y cirujano del Hospital de Tiquisate, Guatemala, C.A., y Ruben Aguilar Meza, M.D., cirujano en el Hospital de Quirigua, Guatemala, C.A. Paper. Pp. 118. The Authors, Guatemala, 1949.

RECENT ADVANCES IN PHYSIOLOGY. By W. H. Newton, M.D., M.Sc., D.Sc., Professor of Physiology in the University of Edinburgh, Edinburgh. Seventh edition. Cloth. $4.50. Pp. 268, with 90 illustrations. The Blakiston Company, 1012 Walnut St., Philadelphia 5; J. & A. Churchill Ltd., 104 Gloucester Place, London, W.1, [1949].

THE 1949 YEAR BOOK OF GENERAL SURGERY (AUGUST, 1948-JULY, 1949). Edited by Evarts A. Graham, A.B., M.D., Professor of Surgery, Washington University School of Medicine, St. Louis, Missouri. Cloth. $4.75. Pp. 707, with 216 illustrations. The Year Book Publishers, Inc., 200 East Illinois St., Chicago 11, 1949.

(Continued on page 54)

OTO-LARYNGOLOGY—ASSISTANT RESIDENCY: teaching hospital,*+ 2 or 3 years' service including bronchoscopy, and rhinology; AMA residency approved; available July 1, 1950. Long Island College Hospital, 340 Henry St., Brooklyn, New York. D

WANTED—RESIDENT FOR GENERAL RESIDENCY, beginning July 1, 1950; 177 bed hospital*†; AMA and ACS approved; graduate from A schools only; salary open. Hospital Deaconess Hospital, 4230 Pearl Rd., Cleveland 9, Ohio. D

RESIDENT POSITIONS OPEN—100 BED, MODERN, progressive, general voluntary hospital; surgery and obstetrics are particularly active; approximately 2500 gynecologic; state license not required. Adolph Hospital, 30 Greene Ave., Brooklyn 6, New York. D

INTERN AND GENERAL PRACTICE RESIDENCY—general service; 275 bed hospital*†; approved by AMA; salary $100 month; room and board furnished; only 1st year internship; annual vacation; can remain for three successive years. Lima Memorial Hospital, Lima, Ohio. D

RESIDENCY IN PATHOLOGY — ONE TO THREE year appointments; beginning July 1, 1950. Apply: Superintendent, Harper Hospital,*+ Detroit, Michigan. D

WANTED—ONE OR TWO INTERNS; NEW MODERN 100 bed general hospital; salary $100 monthly; furnishes room and board; 2 months' vacation after one year of service. Write Chief D, % AMA.

GENERAL PRACTICE RESIDENCY—116 BED ACS approved hospital; one year; must be graduate of class A school; salary $100 per month plus 2 years optional. Apply: Administrator, St. Luke's Hospital, St. Paul, Minn. D

WANTED—TWO GENERAL RESIDENTS AND TWO interns; to begin July 1, 1950; general medical*+; fully approved for internship and residency; Administrator, St. Joseph's Hospital, Lancaster, Pennsylvania. D

PATHOLOGY RESIDENT — VACANCY; 600A-bed hospital; teaching; approved; salary $100 per month; 1 to 3 years; AMA approved; 2 years' residency required; 2500 autopsy, 250 tissue per year. Write: Superintendent, Harlem General Hospital,*+ Harlem, Virginia. D

12 MONTHS ROTATING INTERNSHIP, 1; BEGINning July 1, 1950; AMA approved; $75 per month; room; board and laundry. Apply: Director, Fort Hospital,*+ 3525 Prospect Blvd., Cleveland 15, Ohio. D

WANTED—RESIDENT IN ANESTHESIOLOGY; VOLuntary hospital, 300 beds; teaching affiliations; service to start July 1; 12 months' minimum. Dean, 720 Rush Street, Medical Arts Building, Chicago. D

ANESTHESIOLOGY RESIDENCIES — AT UNIVERsity of Minnesota Hospitals; Administration, hospital and associated hospitals; enhanced clinical service and basic science courses; part of period will be spent in research. Address: Earl M. Rovenstine, M.D., Director of Anesthesiology, University of Minnesota Hospitals, Minneapolis, Minnesota. D

APPROVED RESIDENCIES—AVAILABLE AT GLENN Dale Hospital,*+ the tuberculosis sanatorium of the District of Columbia; salary $2400 per annum; 1 year internship required. Apply: Medical Director, Glenn Dale Hospital, Glenn Dale, Maryland. D

WANTED — RESIDENT: GENERAL HOSPITAL, closed staff; duties principally ambulance, surgical assistant; salary, room, board, laundry; approved. Superintendent, 731 Provident Loan, Medical Arts, Pittsburgh Building, Chicago. D

RESIDENCIES WANTED

WANTED—APPROVED GYNECOLOGY OR GENERAL gynecology residency; July 1st or soon after; 3 years' surgical work; graduate of class A medical school. 9716, % AMA.

LOCUM TENENS WANTED

DOCTOR WANTED—FOR AT LEAST SIX WEEKS; at once or before July 5th; general practice in farming community; fishing pastures in region. Reply: Box 1202, Kingsville, New Boston. G

LOCUM TENENS—ONE YEAR; BEGINNING JULY 1st; qualified general practitioner; in Pennsylvania town; open 50 bed hospital; some surgical cases; desirable Pennsylvania license essential. Box 9781 C, % AMA.

YOUNG DOCTOR WANTED—TO TAKE OVER GENeral practice for 2 months; starting July 1, 1950; good opportunity later if right man; location in western Pennsylvania; write details. Box 9820 C, % AMA.

LOCUM TENENS WORK WANTED

PATHOLOGISTS—WHY NOT TAKE THAT VACAtion? Brief spell saves many months of routine. Long week or 10 days; for salary and expenses; reporting to you personal on your routines. Box 9822 H, % AMA.

SITUATIONS WANTED

HAEMATOLOGIST—CANADIAN UNIVERSITY GRADuate in charge hematology of large hospital and cancer clinic; seeks responsible post; highest references. Reply: J. H. Cobb, 1225 Wentworth St., Regina, Canada. I

ANESTHESIOLOGIST — BOARD ELIGIBLE; TWO years' hospital experience; desires position, eastern coastline hospital or group in New York City or state. Box 9778 I, % AMA.

WOMAN PSYCHIATRIST — FIVE YEARS' EXPERIence (residency) in hospital for adult functional psychoses, hospital for adults and children, psychiatric consultation and private practice; desires position in or near New York City; has valid medical license; graduate of National Board; married; salary $5000 per month plus maintenance. Box 9777 I, % AMA.

PEDIATRICIAN—BOARD ELIGIBLE; 31; MARRIED; desires position locally in private practice, clinic or small group. Clinic or preceptorship; graduate of Europe (have practiced but number other years. Box 9714 I, % AMA.

(Continued on next page)

Mason-Allen Universal Hand Splint

Adaptable to Most Hand Wounds For Proper Immobilization

IN POSITION OF FUNCTION

For Either Right or Left Hand

This simple aluminum splint immobilises either the right or left hand *in position of function*, following injury, infection, fracture, or reparative surgery. Proved in war-time use, it permits application of pressure dressings; it is suitable for about 90% of all hand wounds. Shaped to conform to the convexity of the forearm, it has a molded cup which fits the palmar concavity and conforms to the heel of the palm. It holds the wrist in dorsiflexion and lets fingers and thumb rest naturally in grasping position.

$3.00 Each

$30.00 Dozen

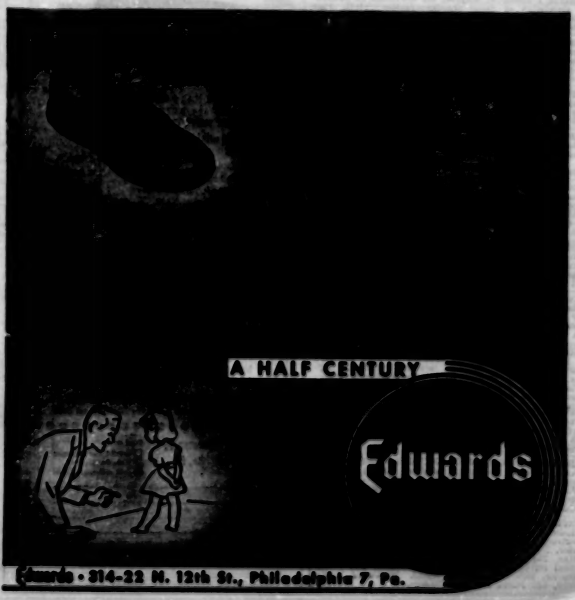
Order Direct From.....

Instrument Makers to the Profession

V. Mueller and Company

320-408 South Honore Street

CHICAGO 12, ILLINOIS



Edwards • 314-22 N. 12th St., Philadelphia 7, Pa.

(Continued from preceding page)

GENERAL PRACTITIONER — DESIRES SUITABLE location for practice; on salary basis or commission; in Ohio or West Virginia; available at once. Box 9779 I, % AMA.

WANTED—APPROVED GYN OR OB-GYN RESIdency; July or after; age 34; DNB; Massachusetts license; 27 months toward Boards; mostly obstetrics; good gynecology; preceptorship considered. Box 9402 I, % AMA.

GENERAL PRACTITIONER—27; MARRIED; MINNEsota graduate; rotating internship; year pathology; 18 months general practice; desires group or individual association; West, Mid-West preferred. Box 9747 I, % AMA.

SURGEON—A COLLEGE; INTERNSHIP; GRADUated 1936; age 43; veteran 4 years AAF; desires any location; OB and refractions. Box 9782 I, % AMA.

PHYSICIAN—FEMALE; NEW YORK LICENSE; EXperienced in gynecology and obstetrics; approved rotating internship; desires assistantship with physician or position in clinic, etc; in New York. Box 9731 I, % AMA.

PATHOLOGIST — WITH EXTENSIVE EXPERIENCE all phases laboratory work; desires to change to small or medium sized town; comprehensive description in 1st letter appreciated; commission basis preferred. Box 9430 I, % AMA.

HOSPITALS, INSTITUTIONS AND COMMUNIties seeking pathologists and pathologists seeking suitable locations will be listed and assisted as far as possible on written request to the College of American Pathologists, 208 N. Wabash Ave., Chicago 1, Illinois.

RESIDENCY OR PRECEPTORSHIP—IN EYE OR EENT; to complete training; mature; single; 12 months basic study EENT and 12 residency ENT; licentiate National Board medical examiners. Box 9536 I, % AMA.

LOCATION WANTED—FLORIDA; INTERNIST; 35; teaching fellow; university medical school; training complete; desires practice internal medicine either Florida coast-solo, partnership, group; also 2 years' military psychiatry, special training electrocardiography; Florida licensed. Box 9623 I, % AMA.

GRADUATE OF A GRADE A MEDICAL SCHOOL who has just completed an approved rotating internship; desires affiliation with an established general practitioner or an established group. Box 9742 I, % AMA.

MATURE ROENTGENOLOGIST—SEEKING CHANGE; offers his services for any non-clinical task. Box 9565 I, % AMA.

INTERNIST—BOARD ELIGIBLE; COMPLETING 3rd year residency July; diplomate National Board; veteran; age 29; desires position assistant, group or private practice; small town considered. Box 9496 I, % AMA.

ORTHOPEDIC SURGEON—39; DESIRES ASSOCIAtion with Board certified orthoped; excellent training; completed part I; Mid-West preference; available July 1st. Box 9451 I, % AMA.

UROLOGIST—SEEKS A COMMUNITY 25,000-100,000, needing a urological surgeon; am interested in individual association or group practice; further details upon request. James A. Slingiser, MD, Boston City Hospital, Boston, Massachusetts.

INTERNIST-CARDIOLOGIST—DIPLOMATE; 31; FIVE years training internal medicine, university hospital, including 2 years cardiology; experienced electrocardiography, cardiac research; available group, hospital, teaching, other association. Box 9710 I, % AMA.

ORTHOPEDIC SURGEON—AGE 38; CERTIFIED; experienced traumatic surgeon; dependable individual with good training; seeks position or association. Box 9715 I, % AMA.

SURGEON—34; BOARD ELIGIBLE; PART 1 COMpleted; veteran; desires association with group, individual or position; licensed California, Indiana; consider any location. 1841 N. Warman Avenue, Indianapolis, Indiana. IN. 1692.

SINGLE—33 YEARS OLD; DIPLOMATE NATIONAL Boards; 3 years specialized training OB-GYN including basic science; trained at Chicago Lying-in and Bellevue hospitals; desires 1 to 2 years top residency GYN or OB-GYN; must be Board approved; available July 1, 1950. Box 9677 I, % AMA.

GENERAL SURGEON — 34; WELL TRAINED; DEsires association or location; passed part 1 of Board; training in gynecological, orthopedics, traumatic and chest surgery as well as general surgery; available soon. Box 9671 I, % AMA.

GENERAL SURGEON—35; TOOK PART 1 AMERICAN Boards March; diplomate National Boards; licensed New York; veteran; married; desires location with individual, group, independent practice; available July 20th. Box 9669 I, % AMA.

SURGEON — BOARD ELIGIBLE; JOHNS HOPkins graduate; excellent resident training general surgery, fracture surgery, urology; veteran; 34; desires position, location for private practice or association with group, individual, school or industry; consider any location. Box 9573 I, % AMA.

OBSTETRICIAN-GYNECOLOGIST — BOARD CERTIfied; age 37; well trained pelvic surgery; 7 years' hospital training; 3 years' general practice; desires association with group or individual; teaching desirable. Box 9631 I, % AMA.

OPHTHALMOLOGIST-OTOLARYNGOLOGIST — FOUR years training, university medical center; 14 years teaching experience including 6 as head of department; prefers eastern seaboard. For further information, please write: Burneice Larson, Medical Bureau, Palmolive Building, Chicago.

CERTIFIED INTERNIST—GRADUATE GEORGETOWN Medical; 42; seeks group practice; can teach; good army experience, Col. M.C.; 1 year assistant chief, medical service, 300 bed hospital; 1 year assistant chief, medical service, 250 bed teaching hospital; past 2 years chief, medical service, 1400 bed, ½ TB hospital and clinical instructor, university medical school. Woodward Medical Bureau, 185 North Wabash, Chicago.

You're safe in specifying this Olive Oil

Pressed from selected tree-ripened olives, and packed with scrupulous care, Pompeian Pure Imported Virgin Oil Olive truly meets the exacting standards of the medical profession.

In prescription—for infant, adult or aged—for internal or external use—physicians, for more than 50 years, have found they may rely unreservedly on the quality and purity of this famous olive oil. Always specify

POMPEIAN

Pure Imported Virgin

OLIVE OIL

Pompeian Olive Oil Corp.
Baltimore 24, Maryland

Physicians' samples sent upon request

FAR MORE than a water cooler is the amazing New SUNROC SUPER COOLER

● Cool drinking water for you and your patients.

● Ample refrigerated storage space for your biologicals, serums and antibiotics. Available with lock.

● 3 trays of giant ice cubes ... easy pop-out.

Doctors everywhere are enthusiastic about this triple-purpose unit ... installed for the convenience and comfort of their patients as well as themselves. Attractive, efficient, durable and economical ...

SUNROC Model 25 with Water Purifier provides the perfect answer to your refrigeration and drinking water needs.

Mail the coupon ... NOW ... for complete details and price.

SUNROC COMPANY • Glen Riddle, Pa.
Agents, Dealers and Distributors Throughout the World

SUNROC COMPANY
Glen Riddle, Pa.

Send me
☐ Super Cooler Literature
☐ Water Purifier Data
☐ Data on Hospital Models

Name
Title
Company
Address
City Zone State
AM61

(Books Received Continued)

METABOLISM AND FUNCTION: A COLLECTION OF PAPERS DEDICATED TO OTTO MEYERHOF ON THE OCCASION OF HIS 65TH BIRTHDAY. Edited by D. Nachmansohn, M.D. Cloth. $7. Pp. 348, with illustrations. Elsevier Publishing Company, Inc., 215 4th Ave., New York 3; 118 Spuistraat, Amsterdam-C, Netherlands, 1950.

A STUDY OF THE EFFECT OF EVIPAN ON THE FLICKER FUSION INTENSITY IN BRAIN INJURIES. By Ole Berg. Acta psychiatrica et neurologica, Supplementum 58. Translated by Fil. Mag. Kerstin Koch and Gail Åkerman, M.S. Paper. Pp. 116. Ejnar Munksgaard Forlag, Nørregade 6, Copenhagen, K, 1949.

CLINICAL RADIATION THERAPY. Edited by Ernst A. Pohle, M.D., Ph.D., F.A.C.R., Professor of Radiology, Chairman, Department of Radiology, University of Wisconsin, Madison. Second edition. Cloth. $15. Pp. 902, with 202 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1950.

EXTERNAL MORPHOLOGY OF THE PRIMATE BRAIN. By Cornelius J. Connolly, Ph.D., Professor of Physical Anthropology, Catholic University of America, Washington, D. C. Cloth. $10. Pp. 378, with 337 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill., 1950.

CHRONIC DISEASE PATIENTS AND THEIR INSTITUTIONAL CARE. By A. P. Merrill, M.D., Superintendent, St. Barnabas Hospital for Chronic Diseases, New York City. Thesis, Program in Hospital Administration, Northwestern University. Cloth. Pp. 152. The Author, 3rd Ave. & 183rd St., New York 57, 1948.

PERSONALITY: DEVELOPMENT AND ASSESSMENT. By Charles M. Harsh, Professor of Psychology, University of Nebraska, and H. G. Schrickel, Assistant Professor of Psychology, University of Nebraska, Lincoln. Cloth. $5. Pp. 518. The Ronald Press Company, 15 E. 26th St., New York 10, 1950.

GREEN'S MANUAL OF PATHOLOGY. Revised by H. W. C. Vines, M.A., M.D., Professor of Pathology, University of London. Seventeenth edition. Cloth. $8. Pp. 1,200, with 730 illustrations. The Williams & Wilkins Company, Mount Royal & Guilford Aves., Baltimore 2, 1949.

PHYSIOLOGY OF THE NERVOUS SYSTEM. By John Farquhar Fulton, O.B.E., M.D., D.Sc., Sterling Professor of Physiology, Yale University, New Haven, Conn. Third edition. Cloth. $10. Pp. 667, with 141 illustrations. Oxford University Press, 114 Fifth Ave., New York 11, 1949.

THE ARTHROPATHIES: A HANDBOOK OF ROENTGEN DIAGNOSIS. By Alfred A. de Lorimier, M.D., Radiologist, Saint Francis Hospital, San Francisco. Second edition. Cloth. $7. Pp. 335, with 157 illustrations. The Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1949.

HEALTH CONDITIONS AMONG THE CIVILIAN POPULATIONS OF CERTAIN COUNTRIES AFFECTED BY THE WAR. No. 5, International Committee of the Red Cross, Geneva, Medical Division. Paper. Pp. 58. Comité international de la Croix-Rouge, Geneva, Switzerland, 1949.

PROCEEDINGS OF MEDICO-MILITARY SYMPOSIUM FOR MEDICAL DEPARTMENT RESERVE OFFICERS, THIRD ARMY AREA, 21-23 APRIL 1949, OLIVER GENERAL HOSPITAL, AUGUSTA, GEORGIA. Paper. Pp. 193, with 70 illustrations. Augusta, Ga., [1949].

L'ANGIOPATIA ACUTA TROMBOTICA NECROSANTE DEI RENI: CONTRIBUTO ALLO STUDIO DELLA NECROSI CORTICALE BILATERALE DEI RENI. Di Luigi Migone. Omnia medica, supplemento XXII. Paper. Pp. 164, with 55 illustrations. Istituto di ricerche V. Baldacci Editore, Pisa, 1949.

A DESCRIPTIVE ATLAS OF RADIOGRAPHS: AN AID TO MODERN CLINICAL METHODS. By A. P. Bertwistle, M.B., Ch.B., F.R.C.S.Ed. Seventh edition. Cloth. $16. Pp. 622, with 980 illustrations. The C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1949.

ACHIEVING MATURITY. By Jane Warters, Director of Personnel, State Teachers College, Lock Haven, Pennsylvania. Cloth. $3. Pp. 349. McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 18; Aldwych House, Aldwych, London, W.C.2, 1949.

(Continued on page 56)

SURGEON — BOARD ELIGIBLE; 34; INTERESTED gynecology, abdominal physiology; 3 year surgical fellowship, Mayo's; private practice of surgery since January, 1942; seeks association, assistantship, group, clinic or hospital; Bonne Michigan, Minnesota, Texas; immediately available. Woodward Medical Bureau, 1180 North Wabash, Chicago. 1

DERMATOLOGIST AND SYPHILOLOGIST — DIPLOmate; 2 years, assistant to one of the country's leading dermatologists; teaching and research experience; in early thirties. For further information, please write: Burneice Larson, Medical Bureau, Palmolive Building, Chicago. 1

SURGEON — PARTICULARLY WELL TRAINED IN thoracic surgery; 2 year fellowship in general surgery; years residency in thoracic surgery; MS in surgery; part 1 American Board completed. For further information, please write: Burneice Larson, Medical Bureau, Palmolive Building, Chicago. 1

WANTED—OPPORTUNITIES IN MEDICINE; AMONG our candidates are diplomates of American Boards qualified to head departments in medical schools, clinics, hospitals; others are interested in general practice, industry, administration or in further training. Burneice Larson, Medical Bureau, Palmolive Building, Chicago. 1

SCIENTISTS WANTED

WANTED — MEDICAL BACTERIOLOGIST AND VIrologist; to join faculty of department of pathology; university college of medicine; physician or qualified with PhD. Burneice Larson, Medical Bureau, Palmolive Building, Chicago. 1

WANTED—SCIENTISTS, Ph.D.'s, AND CANDIDATES with honor training; specialized with teaching and research institutions, hospitals and industry; metion-grad service; applications strictly confidential. Burneice Larson, Medical Bureau, Palmolive Building, Chicago. 1

PROFESSIONAL AND TECHNICAL AIDES

WANTED — X-RAY TECHNICIAN; WHO CAN DO routine laboratory work and blood chemistries; for clinic in small town, rural area near Montgomery, Alabama; salary open. Box 2720, % AMA.

WANTED — REGISTERED LABORATORY TECHNIcian; for internship; X-ray experience desired; salary, $200 per month. Box 2776, % AMA.

TWO LABORATORY TECHNICIANS—REGISTERED ASCP; to work under certified pathologist. Address communication: Irving P. Gerver, MD, Laboratory Director, St. Francis Hospital, 4 Colorado Springs, Colorado. 1

WANTED—ORTHOPTIC TECHNICIANS; FOR AP-pointment as assistant to ophthalmic surgeon; give full details in 1st reply. Box 2784, % AMA.

WANTED—LABORATORY TECHNICIAN; OFFICE OF internist, diplomate of American Board, on faculty university medical school; duties include research. Chicago area. Box 2794, % AMA. Burneice Larson, Medical Bureau, Palmolive Building, Chicago. 1

WANTED—LABORATORY SUPERVISOR QUALIFIED to assume responsibility for departments of hematology, urinalysis, BMR-EKG and, also, biochemist. MS Degree; large general hospital; middle western metropolis, university medical center; salaries $5000-$7500. Burneice Larson, Medical Bureau, Palmolive Building, Chicago. 1

WANTED — X-RAY TECHNICIAN AND TEACHER; new hospital accredited school; to open; plans being developed for complete college-type curriculum in cooperation with state university; Host 720. Burneice Larson, Medical Bureau, Palmolive Building, Chicago. 1

BACTERIOLOGIST, CHEMISTS, LABORATORY technicians, X-ray technicians, physical therapists, occupational therapists; opportunities in all parts of the nation. Registered technicians wanted for all parts of United States. Burneice Larson, Medical Bureau, Palmolive Building, Chicago. 1

SHAY MEDICAL AGENCY
55 E. Washington Street
Chicago 2, Illinois

MEDICAL LABORATORY TECHNICIAN; Large hospital, eastern city; unusually attractive salary; excellent working conditions; others very good salaries; $3600 to start.

REGISTERED MEDICAL TECHNOLOGIST; Northwest; 100 bed hospital; fully approved; required to do histological and bacteriological examinations; 2 technicians and 2 assistants in laboratory; salary $3600 to start.

X-RAY TECHNICIAN; East; 300 bed hospital; good opportunity; able to take care of clinic in short time; 2 technicians in department; $360 to start.

APPARATUS WANTED

WANTED TO PURCHASE—CONNELL GAS MAchine unit; table or examining models. Write: Mercy Catholic Medical Center, Darby Hospital, Rd 2nd & Sycamore Streets, Darby, Penna. 1

HOSPITALS AND SANATORIA FOR SALE

FOR SALE—REASONABLE TERMS; EIGHT COTtage hospital; 17 bed hospital and private buildings in Four Rivers, Minnesota; in heart of Pigeon County; modern and equipped; reason for sale, age of owner; planning to retire; will sell for $40,000 or will lease for term of years; $5,000 cash down payment required. Address Box 2788, % AMA.

FOR SALE—HOSPITAL AND HOME; IN BEAUTIful lake region; only hospital in operation within 30 miles and area of 5000 people to be served; large operating and lighting territory; excellent airport on edge of town; good reason for selling; net income of $20,000; hospital and practice of over $40,000 per year; am buying to specialize; will sell for $30,000 of which $15,000 must be cash; excellent opportunity for anyone who likes outdoor life and excellent income. Box 2800 C, % AMA.

FOR SALE—NINE ROOM CLINIC; WITH OR without equipment; 4 years old; located in a fast growing city of 30,000 population; a very good opportunity for medical and surgery; if interested write a complete letter and state your best offer; $15,000 or more if not satisfactory. Address Box 2796, % AMA.

(Continued on next page)

NEW!

Saves hundreds of dollars for clinical and biological laboratories.

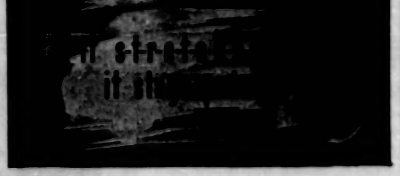
"Manual of Standardized Procedures for Spectrophotometric Chemistry"

Now, for the first time, a book that saves hundreds of hours, hundreds of dollars and much trouble in preparing most procedures for spectrophotometric chemistry.

- Contains 224 procedures for the determination of 115 substances in various biological fields; includes 115 calibration curves and 6 charts. 339 tests can be performed from this manual.
- Outlines, in detail, a step-by-step procedure for performing each determination. All methods were painstakingly worked out on the Coleman Spectrophotometer. The methods are adaptable to nearly every instrument marketed today, including Beckman, Klett-Summerson, Leitz, Hellige, Cenco, Lumetron and Evelyn.
- Includes only the latest and most approved clinical methods . . . accurate, easily applicable, simple. All methods were proved under actual working conditions by independent authorities.
- Contains 720 loose-leaf pages, printed in large, clear type, on paper especially selected to stand constant laboratory handling.

If you use only a few of these many procedures, you will save far more than the cost of this manual, priced at thirty dollars a copy. Order your copy now or write for free descriptive literature.

STANDARD SCIENTIFIC SUPPLY CORP., Publishers
38 West 4th Street, New York 12, N.Y.



For Comfort . . . Neatness . . . For Support . . . Compression

The Dependable Original E-L-A-S-T-I-C Adhesive Bandage

ELASTOPLAST
Trade Mark

Molds and holds to any contour . . . Allows joint motion . . . Provides firm support and controllable compression . . . Does not slip. Assures the neatest, most comfortable dressing in private and hospital practice. Available at your dealer in widths of 1, 2, 2½, 3, 4, 5 and 6 inches, 3 yards long (slack).

• Elastoplast is also available in convenient unit dressings and compresses. Write for literature.

DUKE

(Continued from preceding page)

PRACTICES FOR SALE

ARIZONA — LUCRATIVE GENERAL PRACTICE; fully equipped modern office and beautiful home; for retiral cost of home and equipment; immediate possession; terms. Box 3042 F, % AMA.

LOS ANGELES, CALIFORNIA SUBURB — ESTABlished practice and office of radiologist; diagnosis and therapy; unusual opportunity. Box 3750 F, % AMA.

CALIFORNIA—SAN FRANCISCO BAY AREA; well established practice; to city of 75,000; population will be 40,000 in 5 years; hospital facilities; practice had $60,000 in 1949; medical meeting attended; practice grossing $22,500-$30,000 and net around; all services, including large X-ray; clientele of 1,500; lease-option terms. Dr. [illegible] 201 [illegible] Ave., [illegible] Calif. Phone [illegible]

SOUTH CAROLINA—FOR SALE OR FOR RENT; modern, fully equipped 5 room office; active surgical and general practice; house available; gross $25,000; want to specialize; no reasonable offer refused. Box 9019 F, % AMA.

FLORIDA — RETIRING FROM PRACTICE ON account of age and health; fully equipped office and living quarters; on main highway between Miami and Palm Beach; 15 miles from either city; ideal climate; good opportunity for an American physician; excellent location in thriving part of Broward County; [illegible] Dr. [illegible] Pompano, Fla.; for complete sales details, address MD, 2447 Grand Central Ave., Tampa 6, Florida.

ILLINOIS—INTERNIST ALLERGIST, JOINING group; only specialist; will sell with or without office; [illegible] Box 3758 F, % AMA.

ILLINOIS—UNOPPOSED RURAL PRACTICE; OFFICE and equipment; central Illinois; excellent hospital facilities; 250 tonsilectomy; leaving for residency. Box 3760 F, % AMA.

ILLINOIS—EYE, EAR, NOSE AND THROAT PRACtice; established 30 years; Chicago north side; for sale of equipment; reasons; will introduce. Box 9028 F, % AMA.

CENTRAL ILLINOIS—OUTSTANDING OPPORTUNITY for young general practitioner; to qualify optometrist; gross $30,000; [illegible] Write: Box 327, Pekin, Illinois. Phone 21. P

NORTHEASTERN INDIANA—LARGE GENERAL practice; 35 miles from [illegible]; 60 miles from [illegible]; will be sold to the right party; [illegible] reasonable inventory of office. Box 9020 F, % AMA.

SOUTH CENTRAL KANSAS—TOWN OF 3000; GENeral practice netting over $25,000 per year; permanent practice will sell to right party for reasonable figure and terms; [illegible] Dr. C. Miller, M.D. [illegible] Kans.

BALTIMORE, MARYLAND—ACTIVE GENERAL practice; well established; complete [illegible] office and residence; well populated urban area; [illegible] opportunity; terms; good reason for retiring. Box 3011 F, % AMA.

DETROIT, MICHIGAN — NORTHWEST; UNUSUAL opportunity for qualified man; modern residential section; limited practice; [illegible] office; close to large hospitals; leaving state; terms. Box 9150 F, % AMA.

NORTHERN MICHIGAN — ESTABLISHED RESORT practice; 30,000 seasonally; large drawing area 75,000; ideal obstetric practice for anesthetist, or general practitioner; excellent specialty surgery; hospital recommended. Box 9044 F, % AMA.

FRANICK — NEW JERSEY — LARGE GENERAL practice; 25 years; house and fully equipped office; [illegible] for rent immediately; will sell to right party; health forces retirement. Box 9140 F, % AMA.

NEW YORK, NEW YORK—AMBULATORY PROCtology and arboriculture; will teach if necessary; established for years; excellent clientele; good equipment; lay overhead; 3 years average income; only good. Phone SU 7-2030.

NEW YORK — GENERAL PRACTICE; WONDERFUL opportunity; modern 6 room residence-office; on main thoroughfare; prosperous outlying community; specialties limited; Dr. Frederick Keiser, M.D., 760 Jewett Ave., Bronx 65, New York.

NEW YORK — WESTCHESTER COUNTY; LARGE beautiful home-office combination; established 30 years; by qualified internist; retiring because of ill health. Box 9176 F, % AMA.

WEST TEXAS—PRACTICE AVAILABLE; THRIVing town of 6,000; 8 room office; will introduce; will sell or will rent office and equipment; will furnish [illegible] with office if desired. Box [illegible] F, % AMA.

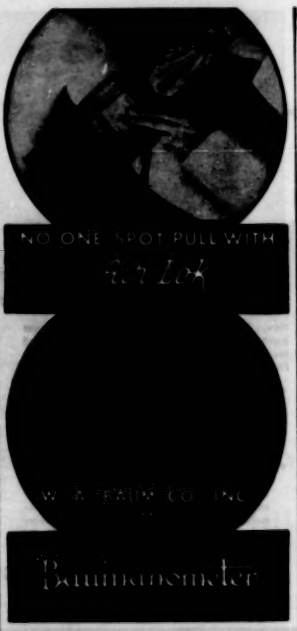
NORTHERN WEST VIRGINIA—GENERAL PRACtice; in town of 2500; agriculture, oil and gas; equipment and supplies for sale at inventory evaluation; opportunity for [illegible] equipment; specialties. Box 9731 F, % AMA.

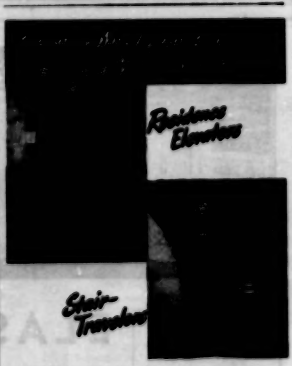
SOUTHERN WEST VIRGINIA—RECEIVED ABOVE average collections; [illegible] community to split profits; equipment, [illegible] X-ray; private clientele established; house optional. Box 9016 F, % AMA.

WISCONSIN—RENT PRACTICE; PROSPEROUS MIDdle size city; 40,000; located in beautiful county seat with rich dairy lands; excellent schools, churches and hospitals; [illegible] industrial plants; established practice; unusual opportunity for young man; reasonably priced to any buyer; wish to retire on account of health. Box 9040 F, % AMA.

WYOMING—COMPLETELY EQUIPPED OFFICE; located [illegible] county seat of 10,000; good [illegible] county; [illegible] Roentgenology; X-ray unit [illegible] diathermy; [illegible] Box 9010 F, % AMA.

(Continued on page 58)





Sedgwick Residence Elevators and Stair-Travelors are designed to eliminate the danger of needless over-exertion caused by stair climbing. Safe, simple and dependable —easy and inexpensive to install—can be operated on ordinary house current at low cost. Nationwide representation.

Write for Illustrated Booklet AH-7

Sedgwick MACHINE WORKS
155 West 15th St., New York

(Books Received Continued)

HAEMOLYTIC DISEASE OF THE NEWBORN. By M. M. Pickles, D.M., Nuffield Graduate Assistant in Clinical Pathology, Radcliffe Infirmary, Oxford. Cloth. $4.50. Pp. 181, with 21 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill., 1949.

STUDIES IN POPULATION: PROCEEDINGS OF THE ANNUAL MEETING OF THE POPULATION ASSOCIATION OF AMERICA AT PRINCETON, NEW JERSEY, MAY 1949. Edited by George F. Mair. Paper. $2.50. Pp. 169. Princeton University Press, Princeton, New Jersey, 1949.

HEAVY METAL PROSTHETIC GROUPS AND ENZYME ACTION. By Otto Warburg. Translated by Alexander Lawson. Cloth. $3.75. Pp. 230, with 49 illustrations. Oxford University Press, 114 5th Ave., New York 11; Amen House, Warwick Sq., London, E.C.4, 1949.

PRINZIPIEN DER LEBENDIGEN: EINE STUDIE. Von O. Eichler. Half-cloth. 8.40 marks. Pp. 99, with 8 illustrations. Georg Thieme, Diemershaldenstrasse 47, (14a) Stuttgart O; Agents for U. S. A.: Grune & Stratton, Inc., 381 4th Ave., New York 16, 1949.

TRATAMIENTO DE LAS ICTERICIAS HEPATOCELULARES. Por el Dr. Luis Moure Cocceiro. Colección española de monografías médicas, Director: Prof. Dr. J. Puig Sureda. Paper. 20 pesetas. Pp. 56. Ediciones BYP, Calle Calabria, 66 al 76, Barcelona, 1949.

YEAR BOOK OF THE ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE 1950. Patron: His Majesty the King. Paper. 5s. Pp. 133. Royal Society of Tropical Medicine and Hygiene, Manson House, 26 Portland Place, London, W.1, 1949.

THE BIOLOGY OF MENTAL DEFECT. By Lionel S. Penrose, M.A., M.D. With a Preface by Professor J. B. S. Haldane, F.R.S. Cloth. $4.75. Pp. 285, with 18 illustrations. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, 1949.

THE DESIGN AND EQUIPMENT OF HOSPITALS. By Ronald Ward, F.R.I.B.A., F.I.Arb., M.R. San.I. Cloth. $8. Pp. 360, with 217 illustrations. The Williams & Wilkins Company, Mount Royal & Guilford Aves., Baltimore 2, 1949.

STUDIES FROM THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH. Reprints. Volume 139. Paper. $2. Pp. 603, with illustrations. The Rockefeller Institute for Medical Research, 66th St. and York Ave., New York 21, 1949.

VACCINOPROFILASSI ANTITUBERCOLARE: STORIA E APPLICAZIONI PRATICHE. Dal Prof. Alberto Ascoli. Quaderni di tisiologia. Paper. Pp. 75, with 4 illustrations. Edizioni del "Giornale italiano della tubercolosi," Milan, [n.d.].

ANNUAL REPORT ON THE HEALTH AND MEDICAL SERVICES OF THE STATE OF QUEENSLAND FOR THE YEAR 1948-49. Presented to Parliament by Command. Paper. Pp. 114. A. H. Tucker, Government Printer, Brisbane, 1949.

AVIATION MEDICINE: ITS THEORY AND APPLICATION. By Kenneth G. Bergin, M.A., M.D., D.P.H. Cloth. $7. Pp. 447, with 136 illustrations. The Williams & Wilkins Company, Mt. Royal & Guilford Aves., Baltimore 2, 1949.

MEDICAL LATIN AND GREEK. By Mignonette Spilman, Ph.D., Professor of Classics, University of Utah. Second edition. Paper. $3.25. Pp. 139. The Author, K. H. 316, University of Utah, Salt Lake City 1, 1949.

REPORT OF THE POST-GRADUATE COMMITTEE IN MEDICINE IN THE UNIVERSITY OF SYDNEY FOR THE YEAR ENDED 31ST DECEMBER, 1948. Paper. Pp. 30. The Committee, 131 Macquarie St., Sydney, [n.d.].

REPORT OF THE GOVERNMENT OF THE DISTRICT OF COLUMBIA FOR THE YEAR ENDED JUNE 30, 1948. Paper. Pp. 320. Government Printing Office, Washington, D. C., 1949.

TERAPÉUTICA ANTISIÓTICA CON TIROTRICINA. Paper. Pp. 76. Departamento científico del Instituto Massone S. A., Av. Tte. Gral. José F. Uriburu 4350, Buenos Aires, 1949.

ORIGEN DE LOS GEMELOS UNIVITELINOS. Por Francisco A. Dolcea. Paper. Pp. 213, with 92 illustrations. Biblioteca, Facultad de ciencias médicas, Buenos Aires, 1948.

Baby Starts Right - Grows Right, in

WALKIE-TALKIE

Lightweights

Proper foot care should start with Baby's first steps. These shoes are built particularly to guide the normal growth of children's feet in their earliest walking days. Good fitting features, excellent workmanship, top grade materials go into the making of each pair

EXTRA HEEL SOCKS
So Foot Rests Normally and Naturally.

TOE COUNTER
Follows Shape of Baby's Heel and Holds It in Snug Position Without Being Squeezed.

PLENTY OF SOCKS
For Comfort and Baby's Normal Foot Growth.

FLEXIBLE SOLES
Light in weight—but Sturdy for Baby's First Steps.

SMOOTH INSIDE
Tongue and Plug One Piece.
No Vamp Seam or Quarter.

Curtis, Stephens, Embry Co., Inc.
READING, PENNSYLVANIA

MAKERS OF Pro-tek-tiv • MODERN AGE • OFFICIAL GIRL SCOUT SHOES

palatable...
potent

Caminoids
in Protein
Hydrolysate
Therapy

FOR ORAL ADMINISTRATION

✓ EASY TO TAKE
✓ WELL TOLERATED*
✓ RAPIDLY ABSORBED
✓ SUPPLIES ALL THE RECOGNIZED ESSENTIAL AMINO ACIDS IN SIGNIFICANT AMOUNTS

Prescribe Caminoids

. . . whenever increased protein intake is required and the patient has difficulty in utilizing the necessary large amounts of protein from natural food sources, as may occur at times in pregnancy and lactation, gastrointestinal disorders, convalescence, chronic malnutrition, surgery (both pre- and postoperatively), and liver disease; certain conditions in children, such as chronic diarrhoea or nephrosis; and in old age, when needed protein foods are likely to be refused or poorly tolerated.

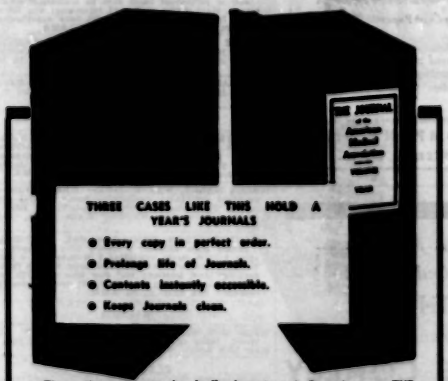
One tablespoonful of CAMINOIDS three times daily provides 12 Gm. of protein as hydrolysate.

SUPPLIED: As a dry, granular powder, in 1-lb., 5-lb., and 10-lb. containers; also available in bottles containing 6 oz.

*CAMINOIDS has a notably low order of allergenicity.

THE ARLINGTON CHEMICAL COMPANY
YONKERS 1 NEW YORK

FILE CASES for Your Journals



THREE CASES LIKE THIS HOLD A YEAR'S JOURNALS

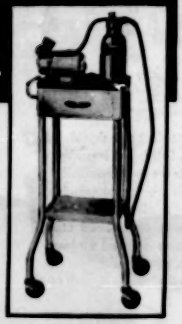
- Every copy in perfect order.
- Prolongs life of Journals.
- Contents instantly accessible.
- Keeps Journals clean.

Three times a year—in April, August and December — THE JOURNAL Index is published as part of one weekly issue. Three file cases—each holding all continuous issues for the preceding four months—complete the complete set for one year. (For 1942, and supplementary) If ordering cases for JOURNALS previous to 1942, state year, and four cases will be sent to fit twice-yearly filing system. Made of substantial box board covered with black binder's cloth. Volume, number and year are left blank on label, permitting user to adapt cases to his needs. Price per set of three cases, or four cases, postpaid, $2.50.

(These cases are not suitable for foreign mailing. Available in Europe from Grande Librairie de la Fraternelle, rue Bonaparte, Bruxelles, Belgique.)

AMERICAN MEDICAL ASSOCIATION, 535 N. DEARBORN ST., CHICAGO 10

Does Your POLIO THERAPY Include this "VITAL STANDBY"?



COMCO ASPIRATORS

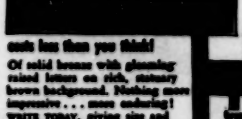
Take Over Where Swallowing Reflexes Fail

● Comco Aspirators quickly, positively remove accumulated secretions which block respiration. Have it UNFAILING PROTECTION! Comco Aspirators give steady, strong suction, require very little attention, and ready to go to the instant you need them. The convenient stand-mounted 710 (shown here) or the 15-lb. portable 709 are yours for protection when polio strikes. ASK YOUR SUPPLIER!

Write for the Comco catalog.

COMCO® **SURGICAL MFG. CORP.**
2300H East Ferry St., Buffalo, N. Y.

your nameplate is beautiful... *Bronze*



costs less than you think!

Of solid bronze with gleaming raised letters on rich, statuary brown background. Nothing more impressive . . . more enduring! WRITE TODAY, giving size and wording for SPECIAL LOW PRICE.

STYLE SHOWN 2½" x 6"

In solid cast bronze, raised letters — sturdy, durable, legible $2.75 each

20 Broadway, Dept. AMA, New York 12, N. Y.

Edin *contributions to modern electrocardiography*

1st with "Ink-Writing" Electrocardiographs
1st with Ten Lead Selector with Unipolar Leads
1st with Electronic Galvanometer Protection
1st with Cardiotron Chart Paper

For accurate and reliable intra-office cardiograms that can be diagnosed immediately, the EDIN model 220 electrocardiograph is the clinician's first choice in modern portable cardiographic equipment.

For further information please write to
EDIN COMPANY, INC.
WORCESTER 8, MASS.

Teckla WHITE GOWNS *for your office patients . . .*

● No. 36 KRINKLE CLOTH for home laundering; ● No. 36 Plain Cloth for public laundering (same prices for 36 & 36): 6 for $15.00; 12 for $28.00
2 Gas. @ $23.00 per Gas.
BACKS OPEN 12 inches, 24" or 30"
Extra Ties: full length (48"). Actual BUST 30 yards MEASURE of garments: Size 1 for $1.00 (Small) 42 inches; Size 2 (Medium) 52"; Size 3 (Large) 60".
● Write for Style Folders on Teckla's fine
DOCTORS' OFFICE COATS and NURSES' made-to-measure UNIFORMS
TECKLA GARMENT CO. Hfrs.
Worcester 1, Massachusetts

TECKLA GARMENT CO.
P. O. Box 603, Worcester 1, Mass.
Gentlemen: Please send us the following quantities of TECKLA PATIENTS' OFFICE GOWNS:
No. 36: Size 1....; Size 2....; Size 3....
No. 36: Size 1....; Size 2....; Size 3....
(Backs open: 12"....; 24"....; 30".....; or full length of 48 inches.....)
EXTRA TIES: .... yds. Send C. O. D.... or Postpaid.....
NAME.....
ADDRESS.....
.....
Teckla pays postage on CASH orders

All AMA Members are invited to visit

BOOTH M-22

at the San Francisco Meeting.

WATERS CONLEY COMPANY
ROCHESTER, MINNESOTA
Manufacturers of
● The Kymographic Camera
● The Cardiotachometer
● Light Source, and other quality medical instruments

(Continued from page 56)

APPARATUS ETC. FOR SALE

FLUOROSCOPES—FROM $195; MEDICAL MICROscope, new $149.50; new combination X-ray & fluoroscope from $495; shortwave diathermies from $35; used and rebuilt equipment, bargains; also other items. Hamel Surgical & Medical Equipment Company, 2203 Jerome Ave., Bronx, New York. FOrdham 7-7545. Q

LEITZ COLORIMETER—SOME CHEMICALS; EXCELlent condition; $150. Box 9750 Q, % AMA. Q

MICROSCOPES, SHORT WAVES, ULTRAVIOLET lamps, cystoscopes, resectoscopes, X-ray outfitters, urological instruments and accessories, sterilizers, suction pumps, other real recognized items. Buy/sell/exchange. Ashdee Surgical Co., 552 Fulton St., Brooklyn, New York. Q

GE CARDIOSCRIBE ECG DIRECT WRITER—LIKE new, $650; RCA cardiotron PC-2 direct writer EKG, $495; Sperry microgauge $195; hospital autoclave, 10 x 24, electric $265; R-B cystoscope, no. 24 fr., $125; Jones waterless Milk, 30 lbs. new $265; etc. Allied Surgical, 178 2nd Ave., New York 3, New York. Q

LARGE STOCK OF NEW AND USED EQUIPment and instruments always on hand for the physician or dentist. Medical Mart, 1077 Forest Ave., East 59th St., New York 21, New York. Q

STANDARD MODEL 200 SHOCK-PROOF X-RAY therapy machine; 140 KV, 20 milliamperes; like new; little used; bargain; $1250 FOB Grand Rapids. Box 9360 Q, % AMA. Q

FOR SALE — RECONDITIONED X-RAY; ELECtrically and physically; high powered; equipment suitable at all distant points in United States and Canada; prices reasonable; terms and accepting trade-ins. Write to Surgo-Ray-Ortho, 2300-10 Locust St., St. Louis 3, Mo. Q

X-Ray Corp., 4600 Sheridan Avenue, Milwaukee 14, Wisconsin. Q

MISCELLANEOUS FOR SALE

FOR SALE—AMA JOURNALS 1883-1937; 109 VOLumes bound. Box 9724 S, % AMA. S

FOR RENT

PHYSICIANS OFFICE FOR RENT—THREE ROOMS, transfer corner; Southeast corner 59th and Kimbark; no competition; we need a good physician on this corner, rent is secondary. Call: Mr. Tervis, Tervis Pharmacy, 5201 South Kedzie, Chicago, Illinois, GR 6-5600. T

NOW AVAILABLE — IN TWO STORY MEDICAL building; a suite of 500 square feet; parking facilities; ample overhead lighting. For information write to Joseph P. Jones, 6315 Wilshire Blvd., Los Angeles 48, California. T

OFFICE—SHARE RECEPTION ROOM WITH ESTABlished dentist; operating room 10' x 10'; North and East exposure; consulting room 10' x 10'; North exposure; private entrance. 6020 Irving Park Road, Chicago, Illinois. KEdzie 6-4043. T

ONE HOUR TO TIMES SQUARE—COMPLETE UNfurnished apartment and spacious sound-proofed office suite; desirable community; lucrative general practice 14 years; leaving to specialize. Agent: Frank Swart, Bound Brook, New Jersey. T

OFFICE, EQUIPMENT, PRACTICE—RENT, LEASE, sale or exchange with option to immediately manage; in fast growing town with good returns; office, clinic, hospital, professional space; rare opportunity; Southern California. Box 9360 T, % AMA. T

UNIQUE OFFER—FOR LEASE ON PERCENTAGE basis; to competent physician or group with California license; long established fully equipped clinic; in ideal location. Box 9760 T, % AMA. T

AMBULANT PROCTOLOGIST'S LOCATION—ESTABlished 10 years; in Texas' largest city. Box 9567 T, % AMA. T

REAL ESTATE FOR SALE

WANTED TO SELL OR RENT—HOUSE-MEDICAL office combination; northwest Missouri location; active general practice; 10,000 population county seat; complete office equipment; will rent or sell. $300 monthly or $42,500. Box 9775 X, % AMA. X

WALLA WALLA, WASHINGTON—THREE ROOM OFfice; air conditioned; comfortable home; central corner location. For further information contact: Dr. Milton H. Robinson, Dyemeller Building, Walla Walla, Washington. X

NORTHEASTERN OHIO—GENERAL SURGICAL; gross $100,000; 3 rooms; 2 baths; basement; 2 car garage; other 6 room suites available; 1 furnished for a doctor; for lease or sale; terms; large waiting room; parking; town 10,000; rent $100 month; 5 year lease (optional); cash option desired; $5000 down; terms for balance. Box 9737 X, % AMA. X

RADIUM

WILL BUY OLD RADIUM—IN ANY TYPE CONtainer. Make offer to: Luminous Industries, Inc., 43 West 16th Street, New York 11, New York. Z

ELECTROLYSIS

SUPERFLUOUS HAIR REMOVED PERMANENTLY—specializing in difficult cases; no case too small, no case too far advanced; painless; free consultation; by appointment only. Lucille Rowland, Licensed Electrologist, 1030 Park Avenue, New York 28, New York. RE 7-7530.

MAKERS OF *Fine* Cosmetics

Quality of Ingredients and Reliability of Selections are two factors underlying the preparation of Cosmetics by Luzier

If you have any cosmetic problems our sales organization will be happy to serve you.
LUZIER'S Inc. ● Kansas City, Mo.

LUMETRON *Clinical*
PHOTOELECTRIC COLORIMETER

Mod. 400-A

With calibrations for 12 basic tests
including hemoglobin, glucose, urea, and NPN; precalibrated for prompt delivery of calibrations for 44 additional tests at any time later on..... $188

With calibrations for 42 tests
precalibrated for prompt delivery of calibrations for 14 additional tests at any time later on..... $178

With calibrations for 56 tests..... $198

Without calibrations
for users intending to establish their own calibrations according to instructions in Reference Book..... $148

EQUIPMENT

Portable housing with instruction card in cover, sliding glass cell carrier holding blank and test solution, 12 matched Pyrex glass cells, 6 color filters, voltage stabilizer for 105-125 volt 60 cycle AC. 140-page Reference Book for Clinical Tests.

REFERENCE BOOK
Contains detailed instructions not only for the test procedures but also for the calibration procedures. Book is available separately, price $2.00.

REAGENT SERVICE
All reagents available for prompt delivery.

LITERATURE
Write for descriptive bulletin, also for free copy of 12-page Introduction to Clinical Photoelectric Colorimetry.

PHOTOVOLT CORP. 95 MADISON AVENUE NEW YORK 16 N Y

43
0

Compare Meritene VS. EGG NOG

as a between-meal nourishment for hospital and convalescent patients

more nutritive value...

	*Egg Nog	MERITENE Milk Shake
Protein	12.5 Gm.	15.0 Gm.
Fat	12.8 Gm.	8.0 Gm.
Carbohydrate	16.2 Gm.	25.5 Gm.
Calcium	0.24 Gm.	0.5 Gm.
Phosphorus	0.27 Gm.	0.4 Gm.
Iron	1.8 mg.	4.4 mg.
Vitamin A	862 I.U.	1,745 I.U.
Thiamine HCl	0.16 mg.	0.7 mg.
Riboflavin	0.5 mg.	1.0 mg.
Niacin	0.17 mg.	4.4 mg.
Ascorbic Acid	4.0 mg.	20.4 mg.
Vitamin D	4 I.U.	150 I.U.
Calories	230	237

PLUS VALUES: A MERITENE Milk Shake supplies 28 per cent more protein and 146 per cent more iron than an egg nog, as well as generous quantities of vitamin C and other vitamins and minerals.

low cost

MERITENE Milk Shake costs no more — based on price of 25-lb. institutional size.

EASY TO PREPARE: Add 1 ounce (4 level tablespoonfuls) of MERITENE to 6 ounces of milk... heat, shake, or mix until smooth.

*Egg nog nutritive values from Geyer, A. de P., and Deuel, H. J., Food: Values of Portions Commonly Used, Philadelphia, 1944, this edition.

Not advertised to the laity...

AVAILABLE: in 1-lb. cans, plain or chocolate flavor, retailing at $1.65 per lb. Also available in 5-lb. economy-size and 25-lb. hospital-size cans.

The PROOF is in the TASTING and MERITENE, fortified whole-protein supplement, does taste good. Send for sample today.

THE DIETENE COMPANY
510 FIFTH AVENUE SOUTH, MINNEAPOLIS 15, MINNESOTA Dept. MA-60
Please send me a free sample of MERITENE, the fortified whole-protein supplement, and descriptive literature.

Name..... M.D.
(Please Print)

Address.....

City..... Zone..... State.....

MILWAUKEE SANITARIUM

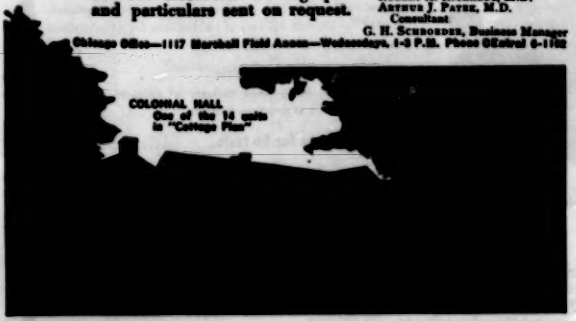
WAUWATOSA WISCONSIN

Maintaining the highest standards for more than a half century this Sanitarium stands for all that is best in the care and treatment of nervous disorders. Photographs and particulars sent on request.

JOSEF A. KINDWALL, M.D.
CARROLL W. OSGOOD, M.D.
WILLIAM T. KRAEPELIN, M.D.
BENJAMIN A. RUSKIN, M.D.
LEWIS DANZIGER, M.D.
RUSSELL C. MORRISON, M.D.
JAMES L. BAKER, M.D.
ROBERT A. RICHARDS, M.D.
ARTHUR J. PAYNE, M.D.
Consultant

G. H. SCHRODER, Business Manager

Chicago Office—1117 Marshall Field Annex—Wednesdays, 1-3 P.M. Phone DEarborn 6-1782



APPALACHIAN HALL

ASHEVILLE NORTH CAROLINA

An institution for rest, recuperation, re-education, re-adjustment, re-orientation and restoration of personality and control of disorders of mind and body including...

Appalachian Hall is located in Asheville, N. C. Asheville justly claims an unrivaled all year round climate for health and comfort. All natural curative agents are used such as pharmacotherapy, occupational therapy, short therapy, outdoor sports, horseback riding, etc. Free beautiful golf courses are available to patients. Ample facilities for classification of patients. Rooms single or en suite with every comfort and convenience.

For rates and further information, write Appalachian Hall, Asheville, N. C.

WM. RAY GRIFFIN, M.D. H. A. GRIFFIN, M.D.

DESIRABLE ASSISTANTS

for your institution
can be contacted thru

A Classified Advertisement

in THE JOURNAL

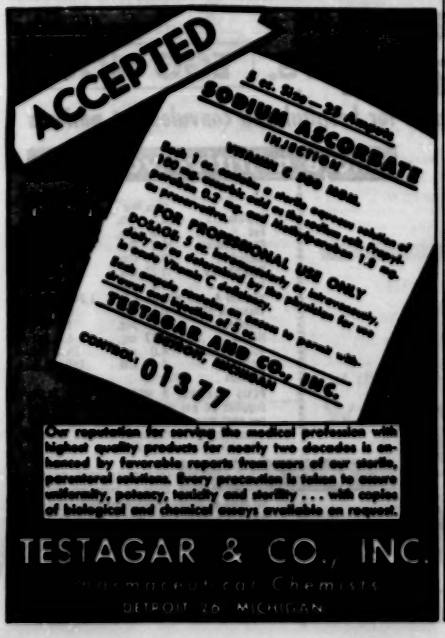
CHARLES B. TOWNS HOSPITAL *Established 1901*

FOR THE TREATMENT OF ALCOHOLISM
NARCOTIC AND BARBITURATE ADDICTIONS EXCLUSIVELY

Complete Medical & Psychiatric Treatment at predetermined cost
Privacy of patient is assured—if desired

Literature on Request

Wm. B. Silkworth, Medical Director Edward B. Towns, Director
293 Central Park West, New York 24, N. Y. SChuyler 4-5970
Member American Hospital Association



SECLUSION Est. 1909 *MATERNITY*

FAIRMOUNT HOSPITAL

For [illegible] girls requiring quality care [illegible]

Fairmont Bldg.

Private institution with certified obstetrician in charge. All [illegible] arranged. Ethical [illegible] charges.

Write for Information

MRS. EVA THORNBURG
1414 E. 57th St.
Kansas City, Mo.

PRESCOTT'S CLIMATE is [illegible] FOR [illegible] of ASTHMA and Allergies

Most patients suffering from **ASTHMA, Hay Fever and Other Allergic Affections**

find in Prescott, Arizona, a combination of climate and living conditions highly conducive to relief.

WRITE for information—living costs and accommodations in Prescott. Address:

Chamber of Commerce Prescott, Arizona

ARCHIVES OF SURGERY

Studies of operative conditions • end-results of operations • anesthesia • infection • preoperative and postoperative care • case reports • common problems of surgeon and general physician.

$14.00 yearly Canada $14.40 Foreign $15.50

AMERICAN MEDICAL ASSOCIATION, 535 N. Dearborn St., Chicago 10

The New York Polyclinic

MEDICAL SCHOOL AND HOSPITAL (Organized 1881)

(The Pioneer Post-Graduate Medical Institution in America)

PHYSICAL MEDICINE

Didactic lectures and active clinical application of all present-day methods of physical medicine in internal medicine, general and traumatic surgery, gynecology, urology, dermatology, neurology and podiatrics. Special demonstrations in minor electrosurgery, electrodiagnosis, fever therapy, hydrotherapy including colonic therapy, light therapy.

EYE, EAR, NOSE and THROAT

A three months' combined full time refresher course consisting of attendance at clinics, witnessing operations, lectures, demonstrations of cases and cadaver demonstrations; operative eye, ear, nose and throat on the cadaver; clinical and cadaver demonstrations in bronchoscopy, laryngeal surgery and surgery for facial palsy; refraction; roentgenology; pathology, bacteriology and embryology; physiology; neuro-anatomy; anesthesia; physical medicine; allergy; examination of patients pre-operatively and follow-up post-operatively in the wards and clinics.

For information address **MEDICAL EXECUTIVE OFFICER: 345 West 50th St., NEW YORK 19**

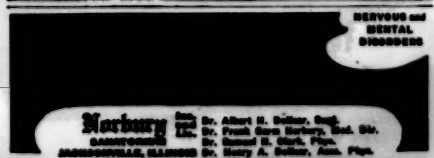
Las Encinas

SANITARIUM

INTERNAL MEDICINE

NERVOUS DISORDERS

C. U. Thompson, M.D., F.A.C.P., Director



NERVOUS and MENTAL DISORDERS

Norbury Sub-urban Inc.

Dr. Albert H. Bolter, Supt.
Dr. Frank Owen Norbury, Asst. Dir.
Dr. Samuel R. Clark, Phys.
Dr. Henry A. Bolter, Asst. Phys.

SARATOGA SPRINGS, NEW YORK

MODERN—WELL EQUIPPED—QUIET Established 1904

ALCOHOLISM, DRUG ADDICTION, NERVOUS-MENTAL DISEASES

Absolute assurance can be obtained through Medicine, during the treatment, discharged. Mental patients received, from private, family and public practice. Only institution of its kind offering complete facilities for Occupational Therapy, Physical Medicine, Electrical and Hydrotherapy, Shock Therapy, Insulin, Metrazol and Psychotherapy. Separate cottages for women patients. Private cottages for gentlemen patients. Separate and complete facilities, equipment and personnel for each sex. Each building owned and operated by a registered physician. Private golf course on premises. Address A. W. Bolter, M.D., Medical Director. (Telephone Saratoga 2121-2122.)

THE STORIES SANITARIUM

The Willows Maternity Sanitarium, Inc.

Est. 1923

Superior service for expectant unmarried mothers. Patients accepted any time. Early entrance advised. All adoptions arranged through the Juvenile Court. Rates reasonable and adapted to patient's needs.

WRITE FOR CATALOG

3527 Holly Street, Kansas City 8, Missouri

BELLEVUE PLACE

for

Nervous and Mental Diseases

EDWARD Stone, M. D., Medical Director

BATAVIA, ILLINOIS PHONE: BATAVIA 1020

THE CHILDREN'S MEMORIAL HOSPITAL

CHICAGO

Announces an Orientation Course in

PEDIATRIC ALLERGY

to be given

AUGUST 14-AUGUST 19, 1950

For Information, write Allergy Department
The Children's Memorial Hospital, Chicago

NEW YORK UNIVERSITY POST-GRADUATE MEDICAL SCHOOL

(A Unit of the New York University-Bellevue Medical Center)

RECENT ADVANCES IN SURGERY

10 days—full time. September 18 through 30, 1950

This course consists of didactic lectures and demonstrations covering the recent advances in General Surgery. Special emphasis is placed on the advances in the Basic Sciences as they pertain to surgery. The newer methods of diagnosis are covered. The physiologic basis of surgical therapy is stressed throughout and controversial methods are fully evaluated. Current trends in research and new techniques are presented.

RADIOLOGY, BASIC SCIENCES

9 months—full time

September 25, 1950 through June 16, 1951

This course includes anatomy, radiophysics, biochemistry, physiology, bacteriology, pathology and the principles and application of radiobiology.

CARDIOLOGY

5 days—full time. October 2 through 6, 1950

This course is designed to cover the field of clinical cardiology with emphasis on diagnosis and modern trends in therapy, with demonstration of patients illustrating typical and atypical lesions. Particular attention is directed to auscultation of the heart and use is made of the electron vectrocope and stethoscope, developed in this laboratory as a teaching aid. By this apparatus, each member of the class can listen through individual stethoscopes, simultaneously to each patient. At the same time the electrocardiogram or stethogram from that patient can be visualized by the entire group. Other teaching aids, such as the fluoredemonstrator for technique in cardiac fluoroscopy, are available.

PHYSICAL MEDICINE AND REHABILITATION

(for specialists)

6 weeks—full time—Beginning September 11, 1950

This course includes advanced methods of diagnosis, evaluation, practical training methods and program planning in hospital practice.

* * * * * * * * * * *

For applications and information about these and other courses, address, Office of the Dean, Post-Graduate Medical School
477 First Avenue, New York 16, N. Y.

MICHAEL REESE HOSPITAL POSTGRADUATE SCHOOL

HEMATOLOGIC DIAGNOSIS

By Karl Singer, M.D., Director of Hematologic Research

July 24 to August 5, 1950 (Full-Time) Tuition: $100.00

Instruction in actual reading of slides—normal and pathological specimens—Peripheral blood and bone marrow. Individual slide collection provided and may be retained by student. Review of present status of Hematology.

DISEASES OF THE ENDOCRINES

Physiology and Diagnostic Methods

Sept. 18 to Sept. 23, 1950 (Full-Time) Tuition: $100.00

By

Dr. Rachmiel Levine

and Members of the Dept. of Metabolic and Endocrine Research and of the Clinical Staff.

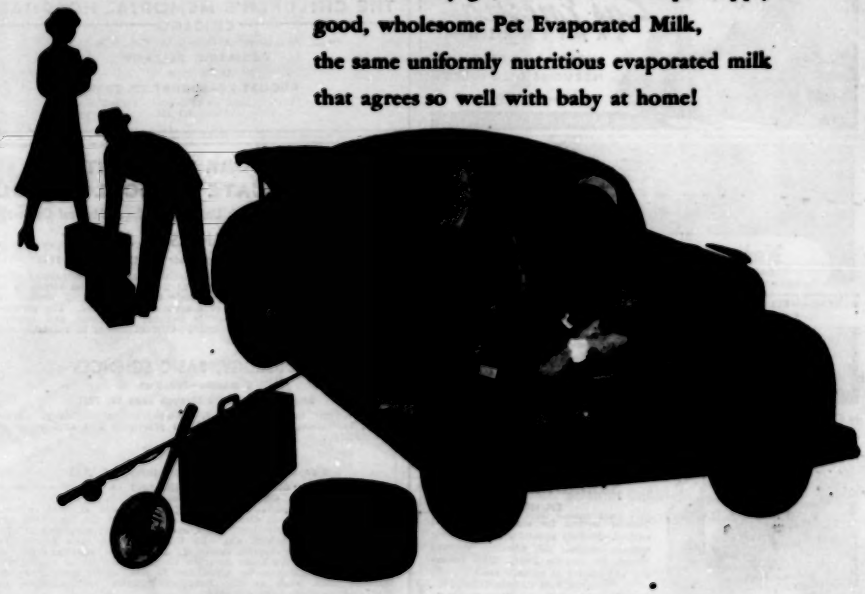
A Balanced Program of Lectures & Case Demonstrations

SIZE OF CLASSES LIMITED: For further information, address: Dr. Samuel Soskin, Dean, 29th St. & Ellis Ave., Chicago 16, Ill.

They Can't Take You With Them... But They Can Take Your Advice!

Yes, young mothers can enjoy vacation travel, too! Because wherever they go—north, east, south, or west—they'll be able to give their babies your Pet Milk formula... the same formula they use at home.

Wherever they go, there'll be an ample supply of good, wholesome Pet Evaporated Milk, the same uniformly nutritious evaporated milk that agrees so well with baby at home!



Favored for Infant Formula

You can be sure of this, too! Wherever they buy it, Pet Milk, sterilized in its sealed container, is as surely safe as if there were no germ of disease in the world!

So when you prescribe formulas for babies, suggest Pet Milk. It's safe! It's nutritious! It's inexpensive! And it's everywhere!

PET MILK COMPANY
1430-F Arcade Building, St. Louis 1, Missouri